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UNIVERSITY REFORM IN GERMANY*

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The teaching force of the German universities may be roughly divided into ordinary, and non-ordinary teachers. The *Ordinary Professors* (O.P.), either with regular professorship, which is fixed and continuous, or with personal professorship, which expires with the occupant, constitute the nucleus of the teaching staff. They are appointed by the reigning Sovereign upon the motion of the ministry who, as a rule, take into consideration the proposals by the faculty of the names of three men thought suitable for the position; but the government is not bound to confine its choice to these names. In addition to a salary paid by the State, graded according to length of service until a maximum is reached, they draw honoraria for their private lectures and fees for graduation, and other examinations. In the administration of the inner affairs of the universities only O.P., generally speaking, have a right to vote as occasion presents itself. From their midst the rector of the university is elected, and from their number also proceeds the delegate of the university chosen as its representative to the Diet of the State.

The non-ordinary staff (N.O.) consists chiefly of Honorary Professors, (H.P.), Extra-Ordinary Professors, (E.O.), and Private Docents (P.D.).

H.P. have the rank of E.O., but have neither teaching com-

* This paper presents in substance the first chapter of a study entitled "University Organization and Reform." The other chapters discuss the universities of Austria, Switzerland, Bulgaria, Great Britain and the Overseas Dominions, France, Russia, Italy, Spain, Greece, Sweden, Norway, Denmark, Japan, and the United States.

mission and salary, nor a definite duty as instructors. In most cases they are older men who have made a name for themselves and in this way are publicly brought into independent connection with a university.

E.O. are either "etatsmässig" or "non-etatsmässig," that is to say, with or without a fixed salary. The former are appointed permanently at a fixed salary which is periodically increased until a maximum is reached. They have a teaching commission for a certain subject or a group of subjects, usually to complete the instruction in the chief branches of study or to represent subjects for which as yet no ordinary professorship has been created. Although sometimes in charge of important sub-departments, their position is that of an associate or assistant professor and as such, with few exceptions, they have neither voice nor vote in the administrative affairs of the university or of the faculty. If non-etatsmässig, they draw no salary but sometimes have a teaching commission and, in that case, receive a small remuneration.

P.D. are scholars who, on the fulfilment of the requirements of habilitation, have been extended the privilege of teaching in a university. But the bestowal of the *venia legendi* signifies merely admission into the teaching body of scholars and not into the State's official corps of instructors. Hence his lecture fees are the sole remuneration which a P.D. may expect. Teaching commissions, given only rarely and in exceptional cases, are limited and involve no claim to permanence. As a teacher the P.D. is, nominally at least, on equal terms with the professors. He has the use of lecture rooms and laboratories and his lectures and exercises are officially announced. Formal enrolment of students in his courses is accepted as regular work, but they are confined to the subject for which the P.D. has qualified.

The historical predecessor of the P.D. was the *magister legendus* of the early *universitas*. In the times of the *studium generale,* and also later when that title had been absorbed and *universitas* designated the institution of learning as such, every student, by virtue of his degree, became a member of the faculty by whom it was conferred. The bestowal of the master's degree included the *venia legendi* and in some instances involved the obligation to teach at the mother university for a period of two years. Though self-preservation soon made certain distinctions imperative, in principle this right of the Graduate to lecture everywhere without special permission remained with him for several centuries. The university of Halle, for example, founded in 1694, reiterated in its statutes his right to all the functions of the professor as established by law or by custom. His position, however, never an enviable

one, in time became so precarious that in the first half of the eighteenth century not many followed the calling. An academic career at its best offered then but few attractions. The middle classes were poor, and bright and promising students from these strata of the German people aspired to positions more lucrative than the breadless art of teaching in the universities whose reputation had sunk low and who were completely overshadowed by the newly founded academies.

Probably for similar reasons the number of extra-ordinary professorships was not large at that time. This position had come into vogue during the seventeenth century when various Sovereigns, in addition to regular professors, called to their universities professors "extra ordinem." They received no fixed salary but usually a small emolument from the private exchequer. They were excluded from participating in faculty affairs and had no voice in the autonomous administration of the university. Their position was desirable chiefly because it was apt to be a stepping-stone to an ordinary professorship whenever a vacancy occurred.

Gradual Increase of the N.O.

Available statistics show that in the second half of the eighteenth century the E.O. and P.D. formed a negligible part of the university teaching staff. In 1758 the N.O. constituted 24.8% of the teachers in all German and Austrian universities. For forty years this percentage remained nearly stationary so that in 1796, 26.8%, or a trifle more than one fourth of the force were N.O. But the next century saw a great change in these proportions. The N.O. increased so rapidly as in time to equal and finally greatly to surpass the O.P. in number. The relatively greatest increase occurred after 1880. The ratio in the German universities was in

1880..... 94 N.O. to 100 O.P.
1890.....121 N.O. to 100 O.P.
1900.....140 N.O. to 100 O.P.
1906.....144 N.O. to 100 O.P.
1914.....167 N.O. to 100 O.P.

Whereas, accordingly, at the beginning of the eighteenth century the ordinary teaching force represented the university in number as well as in fact, at the beginning of the twentieth century the situation is almost reversed, so that in some of the larger universities the E.O. or the P.D. are more numerous than the O.P.

Factors of both an objective and a subjective nature are held to be responsible for these conditions. In the first place,

the number of O.P. was not increased sufficiently to keep step with the increase in the number of students. Then again, an inner need for a larger teaching force made itself felt, in satisfying which the increase in ordinary professorships proved entirely inadequate. It grew out of the enlargement of the subject matter, specialization, and the consequent formation of new and independent sub-departments of various sciences. To create ordinary professorships for all these divisions was obviously inexpedient. But since the teaching of each required the knowledge of a specialist, the number of N.O. grew. In the meantime, subjective factors contributed to the same result. While in the eighteenth century literary pursuits or the diplomatic service were generally given the preference to an academic career, sentiment changed in the nineteenth century and thereby caused the supply of academic teachers to exceed the demand. The lure of academic freedom and independence, the long vacations, the privilege to arrange working hours to suit one's convenience, and the opportunities for research prove enticing to many, not to mention the preferred social status of the academic teacher and the nimbus that surrounds the title of "Professor," which acts on the ambition and vanity of certain classes as a power of irresistible attraction. On the other hand, the overcrowding of all professions, the inevitable long waits for positions, and the immediate need of some sort of an income, drive many to chancing an academic career. Thus, inducements, often diametrically opposed, combine sometimes in creating motives for embarking upon the academic career and thereby produce an oversupply of younger teachers.

An analysis of the social origin of the N.O. sheds further light on the phenomenon. Professor Eulenberg (5), dividing the parental vocations into five larger categories, ascertained in 1908 by means of a questionnaire that the higher commercial pursuits and the learned vocations furnished over two thirds of the academic after-growth, so called. The fathers of over 37% of the N.O. were found to be land-holders, manufacturers, or merchants. They comprise the well to do classes. They have grown rich and their sons can afford a breadless scientific career, a fact, of course, which does not preclude the possibility of their being turned in that direction by a psychological factor, founded in the general spirit of mental activity and agility that is apt to prevail in their homes. In the group comprising professional and related vocations which demand a higher education, the university teachers, as is to be expected, were most numerous. Social heredity, expectation of aid in habilitation and promotion, and of a general smoothing out of affairs, probably account for it. Next came

the physicians where the parental milieu most likely played an equally important rôle. A relatively large number was furnished by the higher State-officials, with whom the opportunity for the son to make a name for himself, and also the social advantages of an academic career might have been the determining factors. The showing made by the small capitalists confirms the conclusion that the learned and the well to do furnish the bulk of the academic aftergrowth, and that the contribution is small when the parental vocation tended to create a mental atmosphere which diverted attention from an academic career.

Distribution of the N.O.

The non-ordinary force does not form an inner homogeneous unity but is characterized by typical similarities and differences which correspond to general conditions. The Prussian, the non-Prussian and the Austrian institutions form distinct groups; the large, the medium, and the small universities show noteworthy differences; and again, the distribution among the single faculties is not uniform. The relatively large proportion of N.O. in Prussia and in Austria has its cause chiefly in the abnormal conditions which obtain in Berlin and Vienna. The bulk, namely, of the N.O. is found in the larger institutions, whereas the smaller ones are avoided. This is largely due to the fact that larger cities, such as Berlin, Vienna, Munich and Leipsic, present better opportunities for supplementing the income from academic teaching with that from private occupations. Or the opposite sometimes is the cause. A well to do P.D. prefers the comforts and attractions of life in the metropolis. Indeed, it is not an unheard of occurrence that a P.D. in one of the larger universities, with a lucrative field of activity, is loath to be transferred to a smaller institution, even with promotion in sight.

As to the faculties, the academic after-growth in theology and in law is not numerous, and that for obvious reasons. The lack of differentiation within the sciences, the exclusiveness of the single branches, and the dogmatic treatment of the subject matter are not very conducive to stimulating scientific research. Entirely different, however, are conditions in the medical faculty where the ideal of individual instruction is approached. The ratio of N.O. to O.P. in this faculty is more than 3 to 1. Although this large number of N.O. is desirable, it is nevertheless to be pointed out that many of them have but loose connection with the university. In some cases habilitation is obtained by physicians chiefly in the hope of improving thereby their medical practice. Leniency in the

requirements of habilitation is also held to be responsible for the overcrowding. Similar, and for much the same reasons, are conditions in the natural sciences where, particularly in chemistry, the growth in numbers of the N.O. seems to be out of proportion to the requirements. In history and philology, owing to many sub-divisions of the sciences and to specialization in many directions, the number of O.P. is large and the after-growth also is, and may be, large without the supply exceeding the demand, more particularly since for many of the smaller sub-divisions no ordinary chairs have been established.

Looked upon as indicators of the chances for promotion the figures show that for each 3 O.P. in theology and in law there are two prospective successors, whose chances, accordingly, are fairly good. In history, where the numbers are nearly equal, advancement depends on the length of life of the O.P. Least favorable appear the chances for promotion in the medical faculty where there are 3, and in the natural sciences where there are 2 candidates for each prospective vacancy. But fortunately all this is but figuratively speaking true. As a matter of fact, the circle within which the actual selection for advancement occurs is much smaller than the absolute numbers indicate. This is made evident by even a casual analysis of

The Inner Composition of the N.O. Staff.

Looked at from within, the N.O., from the view-point of personal position and ambition, may be divided into three general groups. (1) N.O. with whom teaching, either from necessity or from choice, is but a secondary occupation. As a rule they occupy another position from which a fixed income is derived. Such are directors of museums or of statistical bureaux, superintending physicians of state or city hospitals, librarians, clergymen, etc. Their presence in the university is held to be wholly desirable. A permanent contact with non-academic conditions of life is apt to result in the introduction of a new and probably wholesome point of view, since only the better qualified know how to combine in this manner their scientific interests with an improvement of their financial condition. To be sure, there is the disadvantage of their subordination to the external influences of politics, church, and other higher authorities, which robs them in part of that freedom and independence so inseparable from the position of the academic teacher. This fact, however, requires no serious consideration. Advancement to an ordinary professorship is in their case improbable, if not impossible, chiefly because

their necessarily limited academic activity precludes achievement of that distinction of scientific performance which is a condition of promotion. Hence they are hardly to be counted in as academic after-growth. (2) The free lances, or those who for certain reasons, voluntarily or involuntarily, have to renounce all aspirations to an ordinary professorship. Among them are men who for one reason or the other were prevented from obtaining the venia legendi until late in life. Perhaps they were teachers or officials elsewhere, thirsting for the greater freedom and more extended sphere of activity at a larger university. Possibly they have only lately been rendered financially independent and thereby enabled to give their whole time to scientific research. Others there are, full of scientific enthusiasm, who are satisfied to make a living somehow, supplementing their lecture fees by an income derived from tutoring or from authorship. All these do not care to be identified with the official organization of the university, including the drudgery of administrative work. Here also belong the so-called "outs" of each science: In theology, the free thinkers of an orthodox faculty; in medicine, the representatives of some special school; in the natural sciences, the neo-vitalists; in philosophy, the followers of Hegel, Schopenhauer, von Hartmann, or Avenarius; in national economics, the disciples of Manchester or of scientific socialism; in a word, all those outside of that realm of science which is officially recognized by way of a teaching commission. All in all, a mixed gathering of scholars this, who indeed contribute much to the life of the German university, giving it color and shading, but who are hardly in line for an ordinary professorship, that official position meant to be entrusted only to those who cultivate the commonly accepted branches of learning to be transmitted to the future officials, physicians, judges, teachers, etc. (3) The last and numerically strongest group, the regular docents; namely, those who mean to ascend the academic hierarchy; first, to be promoted to an extraordinary professorship without or with teaching commission and, eventually, to reach the final goal in the form of a full professorship. They constitute the real academic after-growth and, as will be made more evident, by force of the extensiveness and importance of their activities are an integral part of the teaching staff. Yet, their participation in the inner administrative affairs of the university is insignificant, and again, not an inconsiderable part, it is claimed, is retained in this unofficial position without being less useful or necessary for university instruction as a whole than the ordinary professors are.

The Movement for Reform

Rumblings of dissatisfaction and whispers of the need of reform have for sometime been going the rounds of the non-ordinary teaching staffs of many of the universities. But, while convinced that prevailing conditions were the sluggish resultant of tradition, prejudice, and inertia, rather than the live product of clear and far-sighted vision, the majority preferred to remain silent. They adapted themselves to the administrative machinery as they found it, satisfied with the wisdom of the adage that discretion often is the better part of valor. In 1907, however, a few of the more venturesome decided that the time for action was rife. A call to all universities where the German tongue is spoken was issued by a preparatory committee, and the Fall of that year saw at Salzburg the first German university teachers convention.

Discussion turned to a variety of topics. Since reform, like charity should begin at home, the shortcomings of academic teachers were given an airing. On the other hand, speakers deplored the fact that the well founded system of autonomous administration under State supervision had been permitted to deteriorate into that of a bureaucratic hierarchy. Attempts of government interference in matters which always had been functions of the university were criticised as demoralizing, tending to lower the status of university teachers, and even threatening to render freedom of teaching but a hollow name. Under these conditions, it was pointed out, the problem which confronted them involved not the mere question of a readjustment of a few personal grievances but the attainment of an ideal; hence, further apathy might easily be construed as emanating from the lack of an adequate sense of professional honor. Concerted action was urged and, organization being effected, it was voted to co-operate in the establishment of an annually recurring convention and in the formation of local organizations in all cities where universities are located. Through the efforts of an executive committee a number of local organizations soon came into existence and, in 1909, the E.O. in nearly all Prussian universities had locally combined and under the name of "Association of Prussian E.O." formed an inter-institutional organization. The P.D., being left to shift for themselves, established local organizations of their own, but at a conference in Halle in 1912, to which all other non-ordinary organizations then in existence had been invited, effected a second inter-institutional combine under the name of "Association of German P.D." Finally, in 1912, all local organizations in the non-Prussian universities, where the E.O. and P.D. had made common cause, united

with the German P.D. in a larger body known as "Union of German N.O. Organizations' which, accordingly embraces all German N.O. with the exception of the Prussian E.O. Headquarters are maintained at Halle from where annual reports are issued of which, however, but two have thus far appeared.

The Argument of the Advocates of Reform

Notwithstanding changed conditions, State authorities and faculties, the directive forces of the university, still persist in regarding the position of the E.O. as, what historically to be sure it is, an intermediate or transitionary one. This is held to be the comprehensive cause of the unsatisfactory conditions. The rest is but a bill of particulars.

Proof that the position of the E.O. is in reality no longer a waiting station is adduced from various directions. There are many reasons for falling by the wayside en route to the circle of the select. A teacher may represent a discipline for which from financial reasons no full professorship has been created; his branch may be too specialized and remote to admit of the establishment of a chair; or it may be so unique as to render inexpedient its perpetuation owing to the difficulties to be encountered in the attempt to secure a suitable successor. All these are apt to be permanently retained in the position of an E.O. Again, in several branches the after-growth is so numerous that a number of candidates are available for every vacancy and, since outsiders are occasionally extended a call, individual chances for promotion are correspondingly small. External influences, such as matters of creed or adherence to some definite school of thought, sometimes modify, favorably or unfavorably, the degree of eligibility. Lastly, the fact is to be mentioned that advancement to an ordinary professorship comes to the average teacher only relatively late in life.

On the other hand, the work of the E.O., it is asserted, qualitatively as well as quantitatively is equivalent to that of the O.P.; his responsibility, when occupying the position of manager of an institute, seminary, or clinic, often equals that of an O.P.; his importance also is recognized by the State, since E.O. are pressed into service in the State examinations. Yet, in all which concerns rank, salary, corporate rights, and official influence in matters of instruction and administration, the E.O. is dealt with as occupying a minor position, so much so that in some instances he has retained even the official robe of the P.D.

The Government's Point of View of the Position of the E.O.

Officially, the N.O. claim, an extra-ordinary professorship is regarded as a subsidiary or provisional position. Its function is to supplement or to complete instruction. It has been thus defined on various occasions in the discussions of the diet and by ministers of education: "Whenever a new discipline springs up, to start with, an extra-ordinary professorship is created, and later, when this discipline has become fixed, when its general importance can no longer be questioned, and particularly when a suitable man for the position has been found, an ordinary professorship is established. Naturally, this step also depends largely on considerations of a financial nature." Hence, when the number of students in a department increases very rapidly and the scientific work grows to such an extent that one teacher can no longer master it, it is the custom of the authorities to place an E.O. with teaching commission alongside the O.P. And similarly, in order to estimate the range and importance of a new branch of science, an E.O. with special teaching commission is at first put in charge.

Consonant, furthermore, it is pointed out, with this official conception of the position of the E.O. are his emoluments. A few data substantiate this. Of 155 Prussian E.O. who in 1909 answered an inquiry,

(a) 30 were outside the official salary provisions, but of these 19 received a remuneration of from $150 to $750 annually.

(b) 105 came within the official salary provisions which since 1909 are in Prussia as follows: Initial salary, $650; after 4 years, $775; after 8 years, $900; after 12 years, $1,000; after 16 years, $1,100; after 20 years, $1,200. Professors who derive an income from extra-academic activities remain at the initial salary. Those who draw less than $300 in collegium fees are paid the difference to make up that amount; on the other hand, there is a deduction of 25% from all fees over $750, and 50% from all fees amounting to more than $1,000. An allowance for rent goes to all who are "etatsmässig."

(c) 20, who were division superintendents, received the salary of an E.O. purely in their capacity as State officials. Academically their position was entirely titular, could be terminated at six months' notice, and entitled them to a pension only under the general code.

Significant, finally, in stamping the position of the E.O.

as a subordinate one, are the definitions of his status in the statutes of various universities. Those of the university Bonn, for instance, expressly state that to an extra-ordinary professorship shall be promoted "the more eminent and rising young academic docents, partly in order to encourage them in their chosen profession, partly to have them assist the O.P. and supplement his work." And this conception dominates the constitutions of all universities. The administrative rights of the E.O. are conspicuous by their absence; his participation in matters concerning instruction is limited and, being regulated chiefly by custom, is permissive rather than mandatory.

The Facts in the Case

The contention that the N.O. occupy chiefly positions in the newer, more remote, the relatively unimportant branches of science, and that in most cases these are but temporary positions, is disproved by an analysis of (1) the teaching commissions of E.O., (2) the activities of the N.O., (3) the time required for preparation, the waiting periods and the age of the N.O., and (4) the average age of the O.P., which suggests the need of a rejuvenescence of the official teaching force.

Teaching Commissions of the E.O.

Of 150 Prussian E.O. outside of Berlin, in 1909, 23 E.O., or less than 1/6 had no teaching commission, due to the fact that mere titular promotions are rare.

27 E.O. had a teaching commission designated as "for the purpose of supplementing the activities of the department O.P."

14 E.O., or less than 10%, had a teaching commission for a special discipline, subordinate to the department O.P.

43 E.O. had a teaching commission for a substantial discipline and in many cases were independent of the O.P., the commission being worded "to represent in lectures and exercises" theoretical physics, children's diseases, etc.

43 E.O. had a teaching commission which in no way differed from that of an O.P.

In other words, of the E.O. with teaching commissions more than two thirds had full charge of their department or subdepartment. That a goodly number of these teaching commissions were equivalent to those of O.P. is indicated by the fact that certain disciplines of E.O. in smaller universities are in the larger institutions in charge of an O.P., and again that the duties and responsibilities of many of these E.O. do not differ from those of an O.P.

In 1907, for which year full data are available, about the same ratio otbained, approximately two thirds of the E.O. in all German and Austrian universities having larger or smaller teaching commissions. Their general importance for instruction is revealed by a brief review of

The Activities of the N.O.

The lecturing activities of the E.O. and P.D. combined amounted during the summer semester of 1907 to over two fifths of the total number of lectures delivered in all the universities. In the natural sciences the N.O. assumed nearly one half of the total lecturing activities, and in medicine the number of weekly hours of the N.O. actually surpassed those of the O.P. Some of the causes of this state of affairs have already been referred to. Foremost responsible is the growth of the subject matter of science, the introduction of new disciplines, and the development of new branches by specialization, to cover which the number of ordinary professorships proved inadequate. A second reason is that the increase in the number of O.P. has not kept step with the growth of the student body. There were in round numbers for each O.P. in 1860, 20 students; 1880, 22 students; 1900, 29 students; 1910, 43 students.

And thirdly, promotions to an ordinary professorship in recent years occurred largely in the philosophical faculties, whereas in the so-called upper three faculties the number of O.P. was in some instances actually reduced. Parallel chairs in the latter are rare and, as a consequence, O.P. often lecture to audiences of 200 students or more.

However, in addition to the lecturing activity, an important development in another direction must be considered, namely, individual and personal instruction. Mass instruction by the lecture method is not everywhere feasible. Particularly in medicine and in the natural sciences great weight is necessarily placed on institute and laboratory work, and this individualized form of instruction is beyond the power of one man. From 10 to 15 may be said to be the maximum number of students whose work one instructor is able to profitably supervise. Assistants are required and lately have been employed in increasing numbers, in part for reasons other than the one just mentioned. The celebrated and much sought after O.P. has more important work than that of instructing beginners and, again, a younger man sometimes is really better qualified to teach those to whom he stands personally closer, and to teach that which requires more recent practice than the older men usually can boast of. Here then a great

field is open to N.O. and we find, as a consequence, in medicine, a small army of E.O. and P.D. occupying positions as assistants, chief-physicians, prosectors, institute-managers, etc., and in the natural sciences, over 30% in positions of similar importance.

From a qualitative point of view likewise it is necessary that the O.P. have assistance. The student body has not only increased in size but of late has become more heterogeneous, being composed of graduates of three kinds of institutions with wholly distinct methods of preparation. Not a few are attending the universities without being immatriculated. Male and female teachers, agricultural students, authors, journalists, and others, many of which would derive little benefit if condemned at once to an attendance of the advanced courses by O.P. and who are better served by first subscribing to introductory lectures and courses offered by assistants. Then again, the generally recognized schools of thought and the officially approved views do not appeal to all, yet the true meaning of the term "universitas literarum" implies the obligation of presenting all sorts of views, while the principle of freedom of teaching involves the right of all needs being satisfied. Here also the N.O. steps into the breach and, by introducing a younger force and a new point of view, becomes a wholesome competitor. Lastly, some entirely new tasks have of late come within the scope of academic activity. Merchants, factory managers, workers of all kinds, and even women, are now admitted to the most advanced courses of vocational education, and courses are offered which aim at a refreshing and bringing up to date of the knowledge of those who are permanently occupied with their life's work. Review courses for physicians, continuation courses in political economy, vacation courses for teachers and theologians, technical courses in the natural sciences, and advanced theoretical courses for superintendents and other officials of the great mercantile and industrial establishments, have in recent years become fixed innovations at some of the universities. All these facts, it is held, combine in permanently raising the utility threshold of the non-ordinary teaching force and, by the extensiveness and variety of their nature, tend to show that the academic after-growth has not only acquired a new and inner import, but has assumed specific and independent tasks which are mentally or physically beyond the range of activity of the ordinary professors.

Time of Preparation, Waiting Periods, and Age, of the N.O.

An analysis of the average age of the present N.O. and a comparison of their age at the different preliminary and intermediate stations with the corresponding age of the present O.P. impels the question, it is pointed out, whether the time is not rapidly approaching when an extra-ordinary professorship can really no longer be regarded as a stepping-stone to promotion.

Statistics, applying to 1907, show that the O.P. obtained the Ph.D. degree at an average age of 23.7 years, the N.O. at about 24.5 years; in other words, that the average age of promovation gradually has been pushed forward. Habilitation, the next step in an academic career, was obtained on an average by the O.P. at 28, after 4.2 years of preparation; by the E.O. at the age of 30.7 years, after 5.4 years of preparation; by the P.D. at 30.7 years, after 6.1 years of preparation. These figures indicate that the time of preparation for an academic career is steadily increasing.

The O.P. had attained the grade of E.O. at an average age of 32.4 years, after averaging 4.3 years as P.D.; the E.O. had been promoted to that position at an average age of 36.5 years after averaging as P.D. 6.6 years, or 2 years longer than the O.P. If one considers that the average age of the P.D. in 1907 was over 38 years and that they had occupied this position already for an average period of upward of 6 years, it does not seem unreasonable to assume that in their case the intervening period to promotion will again be considerably prolonged.

The O.P. had reached the full professorship after a waiting period of approximately 4.5 years at an average age of about 37, which means that they had reached the goal at an age when those who were then E.O. had been appointed to the lower office. Since the average age of the E.O. was somewhat over 46, and about 10% of the E.O. were over 60 years of age, and since by a prolongation of the waiting periods at the intermediate stations the prospects of ultimate advancement to a full professorship become more and more remote, it seems indeed necessary to pause and reflect if it is still permissible to speak here of an after-growth.

It is, of course, true that occasionally a young man is appointed to a full professorship, but on the whole, it would appear, the figures above can be trusted to describe the actual conditions. They are confirmed by the following calculation: In 140 promotions to an ordinary professorship during the three years from 1905 to 1908 the average age of the new

appointees in all Prussian universities was 41.7 years, and that of 55 Austrian appointees in the same period was 42.3 years. These figures show that these promotions occurred on the average 5.4 years later than the corresponding promotions of all O.P. holding office in 1907.

The Need of a Rejuvenescence of the O.P.

The average age of all O.P. increased in the space of half a generation just two years. In 1890 it was 51.5 years; in 1907, 53.5 years.

In 1890, 32% were below 45,
48% between 46 and 60,
20% were over 60.
In 1907, 23% were below 45,
52% between 46 and 60,
25% were over 60.

This table serves to show how the increase of the average age was brought about. The percentage of O.P. above the age of 45 has increased from 68% to 77%; that of the O.P. below the age of 45 has decreased from 32% to 23%. In other words, the reason for the increase of the general average is the decrease or total disappearance of the younger O.P.

That this state of affairs is pointed to by the advocates of reform as being unfortunate for instruction as well as for science itself, it is needless to tell. They go so far as to assert that, in view of the possible ascendency in international competition of younger nations with fresher forces and with new ideas, it is apt to prove fatal. A teaching staff or a faculty composed mainly of old professors incurs the danger of becoming stagnant by its disdain of innovations. Confronted by the authority vested in a celebrated name, a departure from accepted doctrines is rarely attempted and is apt to be repudiated as an unwarrantable intrusion upon a privileged domain. Students, in view of the O.P.'s position of absolute power, are prone to preferably choosing those courses which conform to his personal opinions and methods, and in the particular disciplines which he favors. Under such circumstances, new methods and new directions of thought are strangled at the start, and many a promising idea finds an untimely end.

It is also not beyond the range of possibility that even an eminent scientist, rendered less active by old age or infirmity, may thereby fall behind the times. In such a case the whole branch of studies in his charge may, and has been known to, lie prostrate for years in that particular university and the number of students steadily to decline. This could easily

have been avoided if a second professor with equal authority had stood by his side.

Some Statistics up to Date

Statistics, compiled by the writer, show that during the seven year period extending from 1907 to 1914, which may be said to embrace the time of active agitation for reform, the increase in the number of O.P. amounted to 5% against an increase of 20.1% in the number of N.O.; 5.1% for the E.O. and 31% for the P.D. These figures indicate that no appreciable changes, other than those stamped by custom as normal growth, seem to have occurred in the make-up of the teaching staff of the universities, unless one cares to point out that the P.D. appear to have increased more rapidly than ever before.

That the authorities, in the appointment of teachers, have maintained the even tenor of their ways is also suggested by other facts:

(1) The average age of both, O.P. and E.O., has increased since 1907. But, while that of the former did so but slightly, namely from 53.5 to 53.8 years, the E.O. of 1914 with an average age of 47.25 were more than a year older than the E.O. of 1907.

(2) The ratio of the average number of students to O.P., which in 1910 was 43 to 1, has increased so that in 1914 it was 50 to 1.

(3) Figuring by faculties, there was in the period from 1907 to 1914 an increase of the number of

Ordinary Professors		Students
In Theol.	15%	10%
In Law	15%	19%
In Medic.	19%	28%
In Phil.	51%	43%

In the theological faculties the percentage of increase in the number of O.P. was relatively large. This is to be explained only by the fact that the division of this faculty in several institutions into a protestant and catholic section makes virtually parallel teaching staffs necessary.

The large increase in the number of O.P. in the faculties of law most likely was unavoidable since, even as now constituted, their allotment of O.P. is small, if their large percentage of students is considered. This displacement, of course, is justified; for instruction in law is carried on chiefly by the lecture method and in seminaries where one O.P. may supervise a relatively large number of students. High, nevertheless,

as the percentage of increase was, it did not fully meet the requirements. While in the theological faculties the number of E.O. had remained stationary, in law it was found necessary to add over 25%. This fact, if one considers that the P.D. in law also increased by nearly 30%, not only suggests that the work of the N.O. is figured on by the authorities as a substantial factor in instruction but gives room to the suspicion that E.O. sometimes fills places for which ordinary professorships should be created.

The same is true in the medical faculties. Here the O.P., after an increase of 5%, constituted in 1914 but 19% of the total ordinary force, and that in spite of the fact that 28% of the student body are medical students, and that in medicine, with its institute, clinical, and laboratory work, the need of instructing and supervising small groups of students renders imperative the presence of more teachers than in theology or law. These teachers to be sure are forthcoming, but in the capacity of E.O. who, having been increased by 10%, now outnumber the O.P., and of 124 P.D. who were added to the 426 P.D. active in 1907.

That in philosophy and the natural sciences the exigencies of instruction demanded more ordinary teachers than were installed is shown by the increase of nearly 30% in the number of P.D., a fact which leaves no other conclusion than that the government side-stepped paying for something which it knew it could get for nothing.

That this apparently is the policy which is being pursued is further demonstrated by the fact that in the large institutions, but also in some of the smaller ones, such as Freiburg, Heidelberg, and Jena, the attempt to compensate for the inadequate number of O.P. by a disproportionately large number of E.O. is quite obvious. And the argument is clinched by figuring the average number of students for each teacher by faculties. In doing so, we find in 1914 for each O.P. in

Theol.	34	students
Law	62	"
Medic.	72	"
Phil., Nat. Sci.	43	"

The numbers become more equal when the number of students for each one of the O.P. and E.O. combined is computed, namely,

Theol.	26	students
Law	48	"
Medic.	34	"
Phil., Nat. Sci.	25	"

They become reasonable only by also including the P.D., namely,

Theol.	21	students
Law	37	"
Medic.	16	"
Phil., Nat. Sci.	16	"

There can be no doubt that in the faculties of medicine the absence of any considerable part of the N.O. would seriously impair efficiency of instruction. Nor could they be spared in the natural sciences.

The inadequacy of the number of O.P. in the larger universities, even for the lecture form of instruction is so marked that, of late, members of the student body have taken a hand in the discussion of the problem, their chief point of complaint being the resulting lack of inner contact between professor and student. The idea of the lecture form of instruction as the chief implement of university education, one writer suggests, is a mistaken one anyway. The lecture is overemphasized. "It should be superseded by the general discussion of topics, consultations and conferences, in brief, by the substitution of the personal equation for the dead letter."

Unfortunately, however, just those forms of instruction in which personal contact is supposed to be most essential, the seminaries for instance, seem to furnish the most glaring examples of the evils which present conditions give rise to. A good illustration of these is found in the description of a concrete case by Professor Bernheim of the University of Greifswald, at one time its Rector, and now O.P. of history.(2)

After stating how Leopold von Ranke was the first to establish these seminaries for a limited number of his best and most advanced students,—that his successors perpetuated the practice so that finally they became fixed institutions in all German universities,—that usually one member of the seminary reported on certain scientific investigations which afterward were criticised and discussed, or investigations were undertaken in common, whereby the literature passed from hand to hand,—he suggests, regretfully, it would seem, that now obviously it is no longer possible to proceed in this way when, instead of the former ten or twenty members, from fifty to a hundred participate. "And that," he writes, "is now everywhere the case. Even in such a small university as Greifswald, I and some of my colleagues have had for a number of years in the neighborhood of, or over one hundred members in the seminary." "Confronted by this entirely different situation," he asks, "what is one to do?"

"But few teachers have the courage to simply shut the door

when the original normal number of twenty of the select has been admitted. That would be at least consistent, though, to be sure, justified only if those excluded are certain of being taken in charge by other colleagues. . . . For the greater part one meets the situation by simply acting as if not a hundred but the modest circle of old were present and lets it go at that. Here and there perhaps one distinguishes between ordinary and extra-ordinary, or active and inactive members."

"Inactive members!" he exclaims, "the inner absurdity of the whole thing can scarcely be more plainly expressed: *Ein inactiver Arbeitsunterricht!*"

"There they sit, in the front ranks the few chosen actives with whose work the teacher is occupied, and the remainder, the great mass, sit behind and may listen. Whether or not they are able to follow is not of the slightest consequence. . . . Even if inclined that way, preparation for the topic under discussion even in a general way would be impossible since, as a rule, but one or two copies of the necessary books are to be found in the library. . . . Thus they sit there inactive in the true sense of the term; what they learn is more harmful than nothing: to squander their time in dull lethargy, —unless they prefer gradually to disappear. . . . But what of it? They have subscribed for their place in regular form and in their leaving certificates find gloriously certified that they have been members of the seminary."

Similarly, in medicine and in the natural sciences, the afflux to the laboratories is so great that larger lecture and work rooms have become a permanent need. In the largest universities the institutes for general anatomy, physiology, pathology, physics, chemistry, and other disciplines, have assumed extra-ordinary dimensions. Hundreds of students are accommodated and the rooms, as a rule, are filled to overflowing. Demonstrations in connection with lectures, because of the enormous size of the rooms, are practically impossible. Hence special demonstration rooms are provided, or opera glasses furnished to the students, or again, the desks are removed and the seats arranged in amphitheatrical fashion in order to shorten the air line between demonstration object and student.

In the laboratories, where make-shift methods would avail nothing since instruction of such masses of students by a single teacher is impossible, the attempt has been made to improve matters by dividing the attendance into groups, whereby instruction of the more advanced students is carried on by the director of the institute in person while the remainder, under his supervision, is left in charge of an assistant. But even this general supervision sometimes develops into a

task beyond the power of one man and in that case the only alternative has been resorted to, namely, the establishment of a relatively independent division, whose head, however, with few exceptions is but an E.O. [Compare: (14).]

To multiply descriptions of this sort would serve no purpose. Enough has been said to show that there appears to exist some basis of truth for the claim of the N.O. that elimination of some of the difficulties under which instruction is carried on depends ultimately on a sufficient increase in the number of ordinary professorships.

Why the Number of Ordinary Professorships Remains Limited

The question arises: Why is there no adequate increase in the number of O.P., or, as the N.O. would put it, why are extra-ordinary professorships maintained in places where O.P. are necessary? As amplified by them, it is to be answered by saying that the blame rests foremost with the government. Economy, they suggest, surely is one reason. Expenses in behalf of the universities have in the last few decades grown enormously, amounting in 1908 in Prussia alone to about $4,250,000, of which over $1,500,000 went for salaries of teachers. Reason enough for economy, they say, and since the supply of teachers exceeded the demand, the State simply took advantage of the situation.

As a second reason for the retention of many E.O. in the subordinate position they advance a partly presumed, and partly demonstrated, policy of the State authorities to maintain as far as possible but one ordinary professorship in each one of the various departments of a faculty. This is done, they declare, to avoid friction which may result from a clashing of authority. But the principle of subordination is transferred automatically from the sphere of administration to the realm of the university where the lack of the spirit of colleagueship adds neither to the results of academic instruction nor to the dignity of the teaching profession.

Thirdly, it is asserted, in the filling of academic positions and in their gradation, a collateral factor has entered in the aim of the government to secure as strong a hold as possible upon the good will of the teaching force. There are nine distinct grades below that of the O.P. and, while it is not necessary to ascend the scale step by step, yet they present to the State a wealth of opportunities, by promotion now and then, to keep the teachers in good humor and earn their gratitude without much expense.

Last, but not least, the faculties are held to be responsible

for the system of assistant teachers, "now in its fullest bloom." It is not difficult to appreciate the fact, they intimate, that the O.P. of a department, its only representative in the faculty, its recognized expert whose voice is decisive in all matters which concern it, after enjoying this perfect monopoly does not relish the idea of dividing his authority with another. In the capacity of director of an institute he likewise reigns alone, and as absolutely. What then is more natural, they ask, than that he, "a little czar in his dominion," hesitates to endanger his sovereignty by encouraging or expediting the advancement of a possible rival?

To attempt, from this distance, to sift the proverbial grain of truth from these contentions would be unprofitable. That the State, in so far as it is responsible for the system, has followed, as one writer puts it, "the principle of reasonableness in the economic rather than in the moral sense of the term," seems indeed reasonable. That occasionally personal considerations enter in determining a vote in the faculty is nothing strange to human nature. It is to be kept in mind, however, that the testimony emanates from not entirely disinterested sources.

The Demands of the N.O. Analyzed

As outlined by the Association of Prussian E.O., the following changes are called for: The "assistant-teachers" system should be abandoned and the principle established of filling only with O.P. all positions which represent a real teaching need. Accordingly, a majority of the E.O. should be promoted. The remainder should be granted a part in the corporate life of the universities commensurate with their importance for instruction and with their position as State officials. At greater detail, some of the following changes are held to be desirable:

(1) E.O. should have a vote in the election of the rector and of members of the senate. They should have representation in the administrative bodies of the university.

(2) E.O. should be kept informed of all faculty discussions which concern matters of instruction.

(3) An E.O. should have voice and vote in the faculty in all affairs which concern his department, whether in charge of an O.P. or not.

(4) E.O. should have equal rights with faculty members to act as referees of dissertations suggested by them, and as representatives of their department in the oral examinations.

(5) E.O. should have equal rights with the O.P. to the use of rooms and paraphernalia in the institutes and seminaries.

(6) E.O. should receive a salary equal to that of other State officials of similar standing.

The petitions of the P.D., more moderate in nature as well as in language, call for an urgently needed increase in the number of positions for N.O.; a place in the discussions of university affairs; a hearing concerning their own affairs in future revisions of university and faculty statutes; and an opportunity to appear before the faculty and express an opinion in their own affairs, except where questions concerning promotion are involved.

Commenting first on the requests of the P.D., it is to be recalled that many help to swell the great body of N.O. though but loosely connected with the university. This is especially true of medical men, who, actuated sometimes by ulterior motives, have maintained their connection with the university though not exercising their right of docentship to a greater extent than was absolutely necessary. The opportunity for abuses rested in the fact that, except by disciplinary process, the venia legendi was inextinguishable. It was to be foreseen that efforts for reform would be directed first toward a possible weeding out of all undesirable elements. And that was precisely the course which the authorities pursued. The initiative for securing a legal basis for this process of house cleaning was taken by the philosophical faculty of the University of Berlin which, in 1911, by ministerial decree was empowered to amend the faculty statutes by inserting that "the venia legendi expires by waiver." Equal to a waiver is regarded (1) failure to announce lectures for two successive semesters, (2) unjustified failure to lecture during four consecutive semesters, (3) removal without special permit from the university city or its nearest suburbs, (4) acceptance of a major extra-academic position, except with the consent of the faculty. The lead of Berlin has been followed by other universities and amendments of the statutes are apt to be forthcoming where circumstances warrant a change. An objection to the regulations in their present form grows out of the fact that the venia legendi is presumed to expire automatically, so that a P.D. may be deprived of his right without being aware of it. An intentional indefiniteness of language, however, appears to allow the faculties great latitude in their decisions.

Concerning the request of the P.D. for an increase in the number of non-ordinary positions, there is no doubt that an official recognition of their work, though by nothing more than a teaching commission, would prove advantageous. By rendering possible a better organization of instruction, the establishment of introductory courses, the grading of seminaries and exercises, etc., a change in this direction might be beneficial.

The arguments of the objectors can, for the most part, be reduced to an ignorance of conditions.

The plea of the P.D. for consideration in the event of future changes in the collegial organization of the universities is more apt to find favor. As integral parts of the teaching force they claim to be entitled to however a limited representation in the affairs of the university, and more particularly do they desire a share of the rights which the faculties exercise in their capacity as teaching bodies, for example, in the examinations, the procuring of teaching material, construction of the lecture plan, etc. The Austrian P.D. for a long time have enjoyed some of the rights which are here petitioned for. In part they were also incorporated in some recently revised statutes of non-Prussian universities. With these precedents before them, the authorities may be expected in time to look more favorably upon such innovations.

Coming next to the demands of the E.O., it is to be admitted that their objective data constitute a not well disputable argument for the need of more ordinary professorships. But changes, as radical as the E.O. insist upon, are not easily brought about. The prevailing method of filling vacant chairs and creating new ordinary professorships takes into consideration the dual position of the universities so that the central and the academic authorities co-operate in the exercise of these functions. On part of the universities, the general statutes of the institutions as a rule impose upon the faculties the obligation "to provide for the completeness of instruction" and this includes the function, whenever the faculty feels that it is not strong enough to fulfil this obligation, to notify the ministry that it disclaims future responsibility in that respect, and to bring forward its detailed proposals. The faculty statutes usually provide, or when they do not, it is customary, for the faculties to propose three names for every vacant ordinary professorship. Of these the State authorities may recommend to the Sovereign the one best qualified for appointment or they may, if none seem suitable for the position, ignore them all. It will thus be seen that, when the E.O. assail the State's apparent trend to economy, they do not sufficiently appreciate that the establishment of new chairs does not involve merely the question of means for the larger salaries, and when, at the same time, they question the motives of the faculties, they attack in reality the whole system of appointment,—a system which, by means of the right of nomination by the faculties, furnishes a certain guarantee for the scientific ability of the candidate, tends to prevent the development of a ministerial absolutism, and serves as a protection against political pressure, while, by the fact that the final

selection rests with the State, it acts as a check upon pernicious influences in the faculties; nepotism, sects and coteries, who might hold sway if they alone had the say in the appointments.

The lack of moderation of the E.O. is perhaps to be excused in view of the trying conditions developed by the fact that, judging by the past, it is unlikely that the authorities will consent to such a wholesale scheme of promotions as they propose.

In law, where the exigencies of the times call for a close alliance of the study of law proper with the newer science of the State and its foundations, the demand for the establishment of a faculty of political economy sometimes has been opposed by the faculty of law for no other reason than an assumed "numerous clausus" of the ordinary professorships.

In medicine where, in consequence of specialization, new departments grew up, the faculties refuse to acknowledge the importance of some of these and oppose the establishment of full professorships on the ground that they are subsidiary rather than independent departments, or on the ground that a change would involve the danger of a splitting of instruction and the certainty of adding to the difficulties of study and of examinations,—reasons which, in the opinion of men qualified to speak, will not bear the test of closer scrutiny.

In the philosophical faculties, more particularly in the mental sciences, the ordinary chairs are not as well defined as in the upper three faculties. Here it happens that chairs hitherto filled by O.P., through the lack of a suitable successor, are temporarily given to an E.O., or extra-ordinary are changed into full professorships because only on that condition could a desirable successor be secured, or again, one chair for two equally important divisions of a science is occupied here by a representative of one branch, there, of the other. By this instability, since an increase in the total number of ordinary professorships is, as a rule, contrary to the wishes of the faculty, the causes for dissatisfaction naturally are multiplied and the filling of vacancies is apt to be accompanied by pointed discussions.

A recent incident of this sort brought to a point a crisis which has existed in a latent state for a number of years and which, since the whole episode is highly illustrative of the intricacies which surround the full professorship problem, deserves some space.

The philosophical chairs in most of the universities are occupied by professors of pure philosophy, so called, but in a few by psychologists. In the early part of 1913, a short time after the appointment of a psychologist to a chair of philosophy, a declaration, signed by 106 academic teachers, was

sent to the faculties and administrative bodies of all German universities, protesting against the filling of chairs of philosophy with representatives of experimental psychology or men whose chief interests lie in that direction. During the infancy of this science, it was explained, the combining of the two disciplines in question under the charge of one O.P. was inevitable. But with the most gratifying rise of experimental psychology in late years its sphere of activity has grown so much that now for some time it is recognized as an independent science which demands the whole efforts of one teacher. Since the interest of academic youth in philosophy is likewise in the ascendant, the withdrawal from that science of chairs formerly dedicated to it exclusively is felt as a keen injury. In view of all this it would be to mutual advantage, and it is to be recommended, that experimental psychology have its own chairs in the future and that, wherever originally philosophical chairs are now held by psychologists, new professorships be established for the latter.

At first glance, the impartial care with which both branches are here provided for leaves the impression that motives only of a strictly objective nature guided the action of the signers of this declaration. The initiated, however, recognizes instantly the deeper significance of the procedure. Stated more succinctly, their purpose was to reclaim for philosophy all now existing ordinary professorships while suggesting that for psychology new chairs be established. Under the circumstances, pictured above, surely a strange way of balancing justice this which, as one writer puts it, "gives a hundred dollars to one, and promises them to the other." Excellency Wundt, with his intimate knowledge of conditions and his customary astuteness of analysis, did not take long in exposing the real issues of the case and pointed out that the ultimate result of a course as that proposed in the declaration would be the shifting off of experimental psychology into the natural sciences, more especially into the sphere of the medical sciences. "It's real meaning," said the historian Lamprecht, "when one penetrates through hides and tissues to the skeleton of this clever declaration, is nothing less than that so-called pure philosophy is set in array against the independent development of psychology within the frame of the philosophical sciences." "Out with the psychologists!" is the battle-cry.

And these charges some of the signers of the declaration do not at all deny. Psychology, Rickert and Natorp declare, by the introduction of experimental methods, has become a "Specialwissenchaft" which, adds Simmel, so far as he knows, "has produced nothing either positively or negatively of importance to specifically philosophical pursuits."

To elaborate on the pros and cons of the argument is beyond the scope of this work. Enough has been said to show the precariousness, not to say hopelessness, of the cause of the E.O., when men of science, in order to gain their personal ends, do not hesitate to resort to intrigue for the purpose of influencing members of other faculties who are not familiar with inside conditions.

The attitude of the State toward the establishment of new chairs, on the other hand, is more likely determined by larger considerations than those attributed to it by the E.O. For it is hardly conceivable that the State, by condoning petty policies and devices, will incur the risk of impairing the efficiency of the universities,—those institutions who, by the power and extent of their influence, constitute one of its strongest pillars. The central authorities alone, owing to their advantageous position, are able to survey the university system of the Empire, and judge of its needs. The State, therefore, may be presumed often to be guided in its actions and policies by motives which to individuals or even to faculties remain obscure, yet make for the welfare of the system as a whole.

In the matter of an enhancement of their rights in affairs of administration and instruction the efforts of the E.O. are apt to be crowned by better success. With the general decree of 1910 for all Prussian universities as an entering wedge, with a precedent established in recently revised statutes of several universities, and with the organization of the professor-collegium in the Austrian institutions as a model, they enjoy in addition the advantage of having the best of the argument.

Some Recent Reforms

Aside from the new salary regulations for Prussia of April 1, 1909, the organized efforts of the E.O. thus far have produced but one more general result in the Prussian royal decree of May 30, 1910, already referred to, which provides that etatsmässige E.O., active in a special discipline not represented in their faculty, have a seat and decisive vote in that faculty in all matters related to that special discipline. The decision of the question as to which disciplines are to be regarded as special ones is made to rest with the minister of education. It provides further that the right to elect the rector from the midst of the O.P. henceforth be extended to the E.O. with the restriction, however, that the total number of the E.O. qualified to vote must not exceed one half of the total number of the O.P. The right of the E.O., when a limitation of their number becomes necessary, is to be determined by seniority.

In the non-Prussian universities, more notable concessions have been made.

(1) The general statutes of the University of Jena, published in 1907, provide that H.P., E.O., and P.D., if necessary, may be called upon to give opinions, judge dissertations, and take part in examinations, in which case they are entitled to a vote and to a share of the fees.

(2) In the new statutes of the University of Tübingen, "revised in accordance to the spirit of the times," and published in 1912, the N.O. receive consideration to the following extent:

(a) Three N.O., elected for a term of three years, are entitled to a seat in the larger Senate, and one N.O. in the smaller Senate.

(b) All H.P. and E.O. in charge of a special discipline or of an institute, are entitled to a seat in the Professor-collegium in all matters concerning their departments, inclusive of promovations. Other H.P. and E.O., with the permission of the ministry, may also be given seat and vote in the faculty.

(c) N.O. are excluded from deliberations concerning the filling of vacant ordinary chairs, but may be consulted by the faculty.

(d) H.P. and E.O. take part in the election of the rector, but their number is restricted to one half the number of the O.P.

(e) All teachers outside the collegium have the right to be heard in their own affairs when they concern their person or their activity as teachers.

(f) N.O. are eligible to membership of committees of the smaller Senate, if appointed for the transaction of special business.

(g) For purposes of consultation, N.O. may be requested to attend meetings of the faculty and of the larger Senate.

(h) Records of the proceedings of the smaller Senate are open for inspection to N.O. members of the larger Senate.

(3) By ministerial decree of April 24, 1913, H.P. and E.O. of the University of Jena are accorded the right to participate in the election of the prorector, but with the restriction as to number in vogue in the Prussian universities. The N.O., furthermore are entitled to representation in the Senate by a committee of three, which takes part in the deliberations concerning their interests but has no decisive vote.

(4) In the University of Freiburg, in 1913, H.P. were granted the right to co-operate in the election of the prorector,

with restrictions as to number. The resolve further provided that every teacher should be made acquainted with all decrees of the administrative bodies which affect the common interests of the teaching force.

(5) In the three Bavarian universities, Munich, Würzburg, and Erlangen, where for sometime N.O. have co-operated in the election of the rector, a royal decree of July 22, 1913, granted them additional rights as follows:

(a) E.O. in a special discipline, or when directors of an institute, have a seat and vote in the faculty in all matters concerning their discipline or institute, promovations included; excepted are matters concerning the filling of chairs other than those of extra-ordinary professorships.

(b) The faculty may invite for consultation teachers or officials who are not members of the faculty in the narrow sense of the term. With the consent of the faculty, the dean may empower teachers outside of the faculty to report on faculty affairs, and they shall then have a decisive vote in the matter. Such matters are, more especially, promovations.

(c) Every teacher has the right to be heard in his own affairs concerning his person, his teaching activity, or the institute directed by him, except concerning vacancies, promotions, and teaching commissions.

(d) At least once during the academic year, and further upon the request in writing of ten teachers, the dean shall call a meeting of the faculty in the wider sense of the term. At this meeting, wishes and suggestions in faculty affairs shall be in order, all except those concerning vacancies, promotions, and teaching commissions.

The New Universities

The new University of Frankfort, the Göthe University, as some propose to call it, has introduced in its general statutes, so far as the rights of the N.O. are concerned, but one innovation. As in all other Prussian universities, the E.O. co-operate, with numerical restrictions, in the election of the rector and have voice and vote in the faculties in all matters concerning a special discipline not otherwise represented. But in addition they are given some representation in the administrative affairs of the university in the form of an E.O. who is elected annually to membership of the academic Senate.

In the matter of faculties and the make-up of its governing bodies the university presents some unique features. The theological faculty is conspicuous by its absence. On the other

hand, the new university stands alone in having a "Wirtschafts- und Socialwissenschaftliche Facultät," a faculty of sociology or "Kulturwissenschaft."

The regulations governing the composition of the chief administrative body of the university are unusual in two respects. They expressly state that all professors and P.D. are ineligible to membership of the Great Council, with the exception of the rector and the prorector, who are members ex-officio. The deans may be called in when faculty business is to be considered and in that case have voice and vote. The State, likewise, has no representative in this body. The Council is distinctly municipal in its membership. Then again, in a second, smaller body, "the Curatorium," the teaching force of the university as such has absolutely no share in the administration of the university. Frankfort, accordingly, closely approaches the system which prevails in American universities where the president, as a rule, is the only representative of the university in its governing board.

Two other German cities are contemplating the establishment of a municipal university, namely, Hamburg and Dresden. Of these, the plan of Dresden is in its primary stages and, in view of strong opposition by the University of Leipsic, is likely to remain there for some time to come. In Hamburg better progress has been made and the plan for the new university has taken more definite shape. It is proposed for the present to omit faculties of theology and medicine but to introduce an innovation in the form of a faculty for Colonial Sciences.

Concerning the teaching staff, the Prospectus states that E.O. for remote and special disciplines are considered still necessary, but only salaried E.O., with an annual salary ranging from $1,250 to $2.250 and all lecture fees in full, will be appointed. They are to have a seat and vote in the faculty even though their discipline is represented by an O.P. With a restriction as to number they will be entitled to take part in the election of the rector, and they are to have additional representation in the administrative affairs of the university in a new body to be known as Professorial Council.

But all these plans, like many others, it is sad to recollect, may be upset by the work of that grim reaper who just now stalks about Europe's blood-stained battle-fields, and who knows no distinctions between E.O and O.P.*

* The following statistics, compiled by the writer from authentic sources, will serve to give an indication of the effect of the war on the universities:

Total number of students enrolled in all German universities:

Summer Semester 1914..... 61254
Winter Semester 1914-15..... 52547
Of these in military service, 30104.
Summer Semester 1915..... 53556
Of these in military service, 34386.

Total number of active academic teachers: (exclusive of H.P.)

March 1914..... 1197 O.P., 740 E.O., 1250 P.D.
August 1915..... 1250 O.P., 801 E.O. 1201 P.D.

Of the latter, in military or auxiliary service in 1915/16: 205 O.P., 269 E.O., 551 P.D., distributed among the faculties as follows:

Theology ..... 9 O.P. of 181, 7 E.O. of 50, 11 P.D. of 52
Law ..... 35 O.P. of 188, 16 E.O. of 55, 26 P.D. of 68
Medicine ..... 81 O.P. of 247, 146 E.O. of 291, 301 P.D. of 520
Philos., Nat. Sci... 80 O.P. of 634, 100 E.O. of 405, 213 P.D. of 561

Number of deaths on the battle-field:

Winter of 1914-15..... 6 O.P., 3 E.O., 6 P.D.
Summer of 1915..... 4 O.P., 3 E.O., 15 P.D.

A notable fact is the steady increase in the number of women-students. There were enrolled in all German universities:

Summer Semester 1913..... 3400 women
Winter Semester 1914-15..... 3920 women
Summer Semester 1915..... 4569 women

the latter distributed among the faculties as follows: Theology, 7; Law, 116; Medicine, 1,189; Philosophy and the Natural Sciences, 3,225. (Not known, 32.)

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A SMALL BOY'S NEWSPAPERS AND THE EVOLUTION OF A SOCIAL CONSCIENCE

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I

While yet five years old, I began to issue from my small boy's desk, with only paper and pencil for equipment, an imitative monthly "Delineator" and a weekly "Boston Sunday Journal." Both these pretentious publications, despite their very different names, were much alike in content, with each comprising several small smudgy pages covered by scrawling printed word-lists and numberless sketchy drawings of railway locomotives, family portraits, kitchen stoves, and such other drawable articles as had entered into my varied though limited small-boy experience. From time to time the "Delineator" undertook to reproduce "fashion plates" from its original, while the "Sunday Journal," though patterned chiefly after the pictorial section of its real-world prototype, came to include a few personal items on domestic and neighborhood affairs.

A more systematic effort was the "Boston Evening Record," which began to appear daily about a year later. This presented quite regularly three pages of coarsely printed news with small illustrative sketches and a last page of special "feature" pictures, very frequently showing fearful railroad collisions and shipwrecks, and as is sometimes the case with the metropolitan papers, the Friday issue was always double-size and largely filled with the "bargain advertisements" of the local stores. During its brief history of less than a year the "Record" was my only regular publication, but occasionally I made up a "Boston Sunday Globe," or a "New York Journal," or perhaps a "Youth's Companion," and before I was seven years old no less than twenty New York and Boston newspapers and periodicals had been paid the high tribute of boyish imitation. Many of these papers I kept to myself, quietly stuffing them away in an unused desk drawer at home, but after the first year I gathered sufficient courage and pride to deliver each fresh number to my elderly Aunt Nancy, living next door, who paid for them at the liberal rate of one cent a week. Some weeks, particularly in midwinter, my aunt

might receive a paper nearly every day, but in summer, as my fancy turned out of doors, she was fortunate to get even the highly colored Sunday issue which I liked so well to print. Under all circumstances, however, the subscription rate remained at one cent a week, until, in early adolescence, publishing what I considered "an Ideal Twentieth Century Newspaper," free from sensationalism, with news and features of both local and international interest, the price was boldly advanced to "two cents the week; published weekly at $1.04 the year."

The natural growth of my inventive power, very perceptibly hastened by my older brother's teasing threats of arrest for copyright infringement, at length led me to adopt the original name of "United States Journal" and to consolidate all papers under that head. The Journal, succeeding as it did the "Evening Record," began as a daily, but it shortly became a triweekly, which, in turn, evolved into an enlarged weekly, with from six to twenty pages, appearing on Sunday morning. This concentration of effort into one Sunday paper resulted in a gradually widening variety of contents, and besides local and general news there came to be numerous jokes, puzzles, original stories and colored comic pictures. The lighter interests of "children," such as rebuses, "experience" letters, plays and games, and so on were set off on a separate page. Woman was specially treated in a column often labeled "For Lady's Eye," containing, in early times, the inevitable locomotives and cars, but later, as my appreciation of sex grew, such vital things as hats, patterns and recipes. In these various supplemental features are reflected the passing fancies of the metropolitan newspapers, and the height of each craze is easily traceable in the Journal's spasmodic prize offers, doll cut-outs, free "paintings," magic colors, invisible pictures and what not. It finally became necessary to segregate these many novelties in a Regular Feature Section, fully illustrated and decorated in color.

Little by little the Journal evolved a characteristic make-up and its later history is one chiefly of gradual improvement. Coarse scrawling letters and scribbled, half-meaningless pictures develop slowly into a compact "twelve-point" Gothic print (with head- and title-line variations) and carefully copied pictures made to imitate half-tones. A standard issue consisted of six large (five by eight-inch) and six small half-size pages, sewed together in two sections labeled respectively "News" and "Regular Feature." Like the earlier papers, the Journal was printed in lead pencil and crayon, and never more than one copy of one issue was made. Save during warm weather, publication was very regular, and each number

was systematically arranged and printed as neatly as possible with soft lead; while the contents, especially in later times, were well balanced between news, feature and advertisement. In the News Section appeared the week's leading current events under modest headlines, a column or two of local happenings, a few personal and local advertisements, and an editorial page, besides miscellany in the way of jokes, quotations and perhaps an instalment of a serial story. The Regular Features included copied special articles, "funny" pages, rebuses, original "letters" from "Jimmy" and "Aunt Nancy," and occasional back-kitchen talks by "Uncle Hiram," a Yankee variation of Mr. Dooley.

At eleven, though still quite proud of my printing skill and editorial propensities, I began to look upon my small newspaper as something very far from practical reality and extremely "childish." One penciled copy of the Journal a week, read by only one subscriber, appeared to me for the first time as a futile, if not even ludicrous, effort. Then, too, though resorting to carbon tracings for accuracy, I became increasingly sensitive about my inability to draw faces and well-balanced decorations, while I was much bothered by the lack of proper shading and variety in my lettering. The only remedy for the situation seemed to be a printing-press. Urged on by an interested chum, I persecuted my parents until they gave me a small press on Christmas. Soon after getting this I set out boldly to print my paper in "real fashion," but typesetting quickly became tedious, and the first press-printed Journal never went beyond a half-column of mis-set composition. The press was such a disappointment that even the old hand-printed journalism fell into neglect for several months.

But youth is an age of memories and sentiment as well as of reticence and childhood scorn, and frequently as the months advanced I thought yearningly of the "old" days when I had been "Editor." In the new light of painful typesetting experience hand-printing began to appeal to me again as something very enjoyable and perhaps really worth while after all. After sending a very formal Letter to Old Subscribers, I issued the Journal anew, beginning shortly before my thirteenth birthday. For three months the Journal appeared regularly, showing a very high level of development, though the close sentimental conformity to the earlier make-up seems to have retarded progress. An ambitious Christmas number of nearly forty pages marks the passing of the Journal as a regular publication. The printing spirit, however, persisted for several years, though I was quite able to confine its outbreaks merely to the holiday season; when on the Sunday before

Christmas I published a serious-minded Christmas Annual having from thirty to sixty pages, in three or four sections, all bound in a white-cloth board cover. The last of these Annuals was quite elaborate, containing sixty pages besides a twenty-page almanac, and presented stories, poems, editorials, and various special features selected from a year's gleaning of the magazines and newspapers as well as the Editor's school papers. Still later, in deference to my aunt, who moved from town, I revived the Journal for a few months, thinking that my printing would be less trying to her dimming eyes than my script. The last issue, No. 510, appeared as a Grand Review Number on May 28, 19—. I was then eighteen years old.

The United States Journal was undoubtedly the central predominating interest of my boyhood. Printing was my one great mode of expression. I was not, however, so precocious or abnormal as to refrain from the common boyhood plays and sports, nor was I without passing vocational interests. In course of the week, besides being mere boy, I was, at sundry times, Captain, Center, First Base, President, General, Admiral, Postmaster, Boss, Banker, Engineer and what not. Yet beneath all these guises was the Editor. While actually engaged in pastime I was, naturally, quite oblivious in my enthusiasm of all the sterner duties of life, but after the play was over the Editor stepped forward to sift out any incidents of news value or to unearth some abuse worthy of an editorial. I also encouraged my chums to advertise, if they should have any toys or mechanical inventions of their own to sell, or if they specially desired to earn "pin money" by carrying washings or throwing in wood. Nor were the grown-ups exempt, for I frequently quizzed my mother or sister for news, and as I called upon the neighbors I always kept an ear open for the latest scandal.

Like every boyhood "business in life" my editing and printing were taken very seriously. The earliest legible papers bear the imprint of a definite corporation known as "L. C. Day & Co.," and from the first the Management was exceedingly sensitive as to Office Hours, and formulated explicit Rules regarding time limits for the acceptance of contributions and advertisements. Office Hour Schedules were usually printed on small slips to be distributed to interested parties:

OFFICE HOURS

Of L. C. Day & Co!, on, Jan. 18, 19—; MONDAYS, TUESDAYS, WEDNESDAYS, THURSDAYS AND FRIDAYS. 7.00 p. m. to 7.30 pm. Sundays, 11 a. m. to 11.30 a m. and 6.30 p. m. SATURDAYS, 9.00 to 9.30 a. m. 11.30 to 12.00 m. 1 to 1.15 p. m. and 7.00 p. m. to 8 p. m.

Next change not know.

These hours indicate times when the Editor was likely to be found at his desk printing. The Office Rules appeared with marked regularity on the Journal's Editorial Page, immediately below the Subscription Rates:

OUR RULES FOR 19—

We will receive no ads anyway after Wednesday's at 3.00 p. m. for the next Sunday's edition. We do not like to receive much news after Saturday's at 5.00 p. m. for the next day edition. Send for one of our office Hour bills. Free to Journal readers only. Address U. S. Journal Co., Dept. 128. Section 17.

The "& Co." was generally a pure fiction, although now and then my older brother or some chum entered into partnership, perhaps acting as a "reporter," "contributor," "newsboy," or the like. At one time, when a boy living nearby moved to R——, seventy miles away, we entered into an agreement whereby he was to issue a kind of second edition of the Journal from his new home. The R—— paper appeared spasmodically for a little while and then failed, but for some months my Journal continued to publish the Make-Believe circulation figures of the R—— Edition, and frequently mentioned the R—— Office. Again, choosing a partner from among my chums simply as Reporter, I boasted, besides the Local Office at 3 Memorial Street, a Branch on South Main Street. At best, however, these early partnerships were ephemeral onesided affairs, for I appeared to be the only true journalist in the neighborhood, and each alliance automatically dissolved after a few weeks of rather irritating team-work, or as both chum and myself tired of his silent partnership. My editorial career on the whole was lonely, and developed according to my own personal interests and desires.

My methods of printing of course varied at different times, but for the most part I followed a very rigorous system. At ten, for instance, I did things in this wise:

WHERE THIS NEWSPAPER IS PRINTED

(Written and Cocopied by L. C. Day)

In this room [referring to a sketch of the Office] is where this great paper is printed every week. It is where it is put into press also. The editor's room too. The M. B. [Make-Believe] Circulation is very high. A big business is done too. Now we must tell about the paper. The magazine is started the Sunday before issued and filled up thorough the week. The Queer Pictures [magic "invisible" pictures] are made Sunday evenings before issued. The paper is started Sunday p. m.'s before issued. But when the great rush comes is Saturday evening. Work is done quickly. The editor has to work with all his might and main, . . . THE END. . . .

Saturday evening was always a very busy time, but at

Christmas, with an immense holiday number on his hands the Editor was rushed to the point of exhaustion. Though he might begin the Christmas paper three weeks ahead (often the Journal was omitted the first two Sundays in December), the task of collecting Special Features and filling thirty or forty pages with text and illustration was no mean one, and on the last Saturday the Office was a scene of great excitement. The hurried completion of Our Great Christmas Number of 32 Pages for 19— is characteristic:

VERY BUSY!

Dec. 21.—8:45 p. m.—We have just lefted off printing for the day. We begun to print this afternoon at 1:45 and printed until six o'clock p. m. Then about 6:50 we begun again and have printed till now, at 8:45, then the editor went to bed and has now got [up] at 8:00.

Dec. 22.—And is printing this piece of news. The editor says that Dec. 21 was the busiest day that was ever in the Journal office ever known, printing our largest Xmas number and largest edition of 32 pages and counting our music it makes 36 pages. It kept us busy all right I can tell you. . . .

After working entirely alone for about two years as the "U. S. Journal Co.," or simply as "L. C. Day, Publisher," I dallied for a time with numerous make-believe contributors, such as Mr. James B. Ow, editorial writer, W. R. Ross, cartoonist, and a certain spicy Miss T. O. Jinks, who wrote one or two skeptical letters on Marriage. But as I neared adolescence I turned again to my flesh-and-blood contemporaries, apparently in search of journalistic aid and sympathy, and during one fall I induced no less than nine of my schoolmates—six boys and three girls—to serve as a regular contributing staff to the Journal. Among them was an artistic musical lad who sent in a few "pianoforte compositions," cartoons and bits of verse; others supplied news, sketches and short stories, while one merely supplied a few magazine clippings to help fill out the Christmas Number. A young Miss Newman, most charming of the feminine contributors, favored me with two or three brilliant short poems which I published with great pride as "original" over a carbon fac-simile of the poetess' own signature: later impartial investigation, however, reveals her works as admirably exact transcripts of certain classical nursery rimes.

Though mine on the whole was a solitary industry, printing was not entirely without interest for the other boys of the neighborhood. When my own enterprise was yet new, my older brother, inspired by my crude efforts, published for a few months a very superior paper of his own which he called "The Union Press." This paper was a thrice-a-week, and purported to come from the office of "Day & Co., Job Print-

ing," a concern which condescended sometimes to admit me to its personnel as "Official Newsboy." The Press was delivered, like the Journal, to the next-door aunt at some small nominal price, though its published subscription rates in the Editorial Column read:

Price 5 c a paper.
Terms $18.25 a year
Pay in advance or pay $19.50
Published a day before hand.

The Press was always far more provincial than the Journal, for at no time did it print general world news or editorials, even though it was revived at two later times when my brother was quite old enough to have developed broad social interests. His model appears to have been the local village weekly, at the office of which he was occasionally allowed to set type and to pick up paper-trimmings. Still, even in its own field of local affairs, the Press to my jealous mind always seemed very immature and a disgrace to serious journalism, for there often appeared in its columns crude entries of this sort:

Clarence got up at 6:45 o'clock Tuesday morning.

We had breakfast at 7:57 Tuesday morning.

Mr. Day and Mr. Hunter got home from town meeting at 5:25 o'clock.

Ralph came down to our house to stay all night with Clarence.

Clarence did not get home from the drammer Tue eve till 10:45 and not into bed till 10:53.

Familiar personalities like these were forbidden the Journal's columns, save in the very earliest issues; I never referred to my chums without their surnames, and my own name, even in connection with relatively trivial events, was rarely set down as less than "Mr. L. C. Day."

I had no serious or respectful imitators until the later near-adolescent age, when my artistic musical contributor, inspired by a new set of rubber stamps, issued for a short time the "Fulton Weekly." Another young fellow, somewhat my junior, with no particular innate editorial or artistic ability, for a few weeks issued half under my direction the "B—— Recorder," a bi-weekly professing to devote itself to local interests, but which actually was a random compilation of light humor copied from the daily newspapers. Later, under more independent management, this became the "United States World," but this, too, was short-lived.

When twelve I became acquainted with Bernard Adams, a serious-minded grammar-school boy who had been brought

up on the "Outlook" and the classics, and who was at that degree of maturity which made him appear quite fluent on the ills of society and politics. He seemed to realize fully the menace of the saloon, the evils of stock-gambling, the coming rupture between Capital and Labor, and everything else which threatened the peace of humanity. On the other hand, he abhorred sensationalism and yellow journalism generally. We presently formed a partnership, in which he was to supply a few editorials and to advise on various matters of policy. Very shortly, under this management, the Journal, which had been rapidly acquiring a yellowish tinge, with a growing propensity for murders and robberies, became a thoroughly "clean" newspaper, with quiet headlines, little or no sensational news, and conservative editorials, directed for the most part against social and economic evils.

The partnership was known as the "Day and Adams Publishing Company," and shortly a new paper, the "United States Weekly," was issued from the Adams side of the office. Later, somehow becoming much taken with the new "Broadway Weekly," we changed the name to "United States Memorial," Memorial being the name of our particular village street. Many of the Memorial's features were taken directly from the Journal, but on the whole it was obviously a product of the serious Adams mind, using the "Outlook" as a model. Each week there was an impartial review of leading events, and sundry sharp editorial notes of economic or political import. It was so well written, indeed, that an amiable and highly educated woman at a nearby sanitarium became much interested and rewarded us generous praise as well as the cash subscription price of two cents per copy. But the Memorial, like so many of its predecessors, was doomed to a short life, and with its passing the Day & Adams Publishing Company was automatically dissolved.

My most interested journalistic contemporary was Robert Brooker, who began, wholly under my guidance, to print a small weekly known as the "B—— Star." Brooker proved a willing imitator, and I easily led him to occupy my Office jointly with me. The Star soon changed its name to the less prosaic "Comical Sayings," but even this did not please Brooker, and though his paper lived less than three months it came out also under the titles of "United States Record," "Brooker's Weekly" and "Brooker's Semi-Monthly." The contents of all these, however, were fairly uniform, including a few brief news items, colored pictures, and an abundance of jokes; there was little or no original material, for the jokes all came from the daily newspapers and my Journal supplied practically everything else. In fact, the average

Brooker's Semi-Monthly, under whatever name, was scarcely more than a revised United States Journal, and in one or two numbers there actually appeared some of my own printing and drawing. So very comprehensive was Brooker's imitation that he even delivered his paper to a next-door aunt, exactly as I did. But there was no ill-feeling on my part, for I was highly pleased to have a protegé and I was willing to go to any reasonable extreme to maintain his interest in printing. At no time did Brooker become a through-and-through journalist, yet I found immense comfort in his "professional" sympathy, and his respectful, unquestioning imitation was not a little flattering. Brooker and I, though working so much together in the same room, never formed a regular partnership. We looked upon one another as friendly competitors, though of course our papers did not really compete. Yet his parallel labors furnished me a valuable stimulus, and it is certain that during this last printing friendship the United States Journal (except possibly for the Christmas Annuals) reached its highest development.

II

The files of the United States Journal and the earlier papers, comprising in all about eight hundred separate issues, supplemented by a considerable number of school exercises, diaries and boyish "memo" books, altogether furnish an unusually complete record of childhood development. Every drawing, every news item, every story, every "feature" reveals in some way the fine inter-workings of the psychological trinity of heredity, past experience and present influence. There is scarcely a change from within or without which is not directly or indirectly recorded in the columns of the Journal or the supplementary papers and writings. Besides the more specialized developments of play, nature love, sex love, religion, and the like (which may be treated in detail in later articles) four very clearly marked stages of boyhood development may be distinguished. First, we have the early stage in which the papers report news concerning only the Editor himself or his most immediate interests; second, there is the stage in which he becomes much interested in family and domestic affairs; third, there is the stage of neighborly community interest; and, finally, there is a stage of broad social and political interests, accompanied by moral and altruistic tendencies which are reflected in "preaching" editorials or school themes and stories. After this, coming well into the adolescent period, we find a prolonged stage of criticism in which the youthful Editor is simultaneously and impartially critical of self,

family, neighbors and world. Here we find the Journal publishing, on one hand, introspective essays on adolescent thoughts and feelings, and, on the other, satirical editorials, special articles and cartoons.

The editorial career seems to have begun a little prematurely, in a way, for the entire lack of news, even about the Editor himself, in the first papers indicates that he had yet to develop a personal conscience sufficiently strong to give itself expression in written or printed language. But this dumb impersonal stage was of brief duration and long before the Editor could successfully compose a sentence alone he began to print news about himself, having prevailed upon his older sister to print out short items for him to copy. Some of her contributions, such as those about weddings and funerals, were rather too broadly social for him to appreciate, though as a rule she followed his instructions to the letter:

C—— Day walked up to the greenhouse of Mr. Holmes, with his papa, Brownie [dog], and Mr. Hunter Feb. 27, 18—.

Mr. Olney Killed a Large Rat in th Pantry Yesterday Morning? Sept. 26, 18—.

C—— Day weighs 50 pounds he weighed himself Dec. 2, 18— in the Evening.

We went to call on Minnie and the new Babt [baby]. C—— thought the baby was quite a sight.

C—— is a good boy.

Names other than mine are at times common, but they serve only as means to an end. The important point about the greenhouse walk is that C—— went; that the others followed is purely incidental; the killing of the Large Rat is momentous chiefly because it disturbed C—'s usual home routine; and the interest in the new Babt is not so much the baby itself as it was what C— thought about it.

It was not long after I gained a certain amount of independent spelling and grammatical ability that I turned rather strongly toward family and home affairs. Day after day the Journal filled its columns with news of this sort:

WE HAVE A NEW GRIL [GIRL]

Jan. 17—We got a new Gril to-do the Work? Mama was Sick When We got Her.

THE GRIPPE

January 18—My Mama As the Grippe My mama to my mama [grandmother] as the Grip But I have had it 2 times One Last Year and one Time 18—.

Nov. 26—Ma pa me Clarence and Uncle Gilbert All went to ride.

We do not know whether Grace will have the Measles or not.

Household management opened up a new field of boyish activity. My tastes were already becoming strongly domestic,

but Mrs. Kiley, a stout jolly Irishwoman and one of a series of new Grils, put the kitchen in such a favorable light that for a time I found it a real pleasure to get up early and help build the fire, and I came to fill the woodbox frequently even without asking. I became adept in preparing breakfast food and cocoa. Homely jingles about Monday being washday and Tuesday ironing-day could not fail to entertain me. The Journal ran a series of colored cartoons, half-serious, illustrating daily home life in Rubbernecktown. I was particularly well posted as to the items making for a thoroughly equipped pantry, being able off-hand to recommend the best brands of canned goods, spices, and so on, while I had various passing favorites in the way of flour, cereals and extracts. Though occasionally I published copied recipes, my domesticity burst forth from the Journal's columns chiefly in the form of advertisements:

ROYAL BAKING POWDER

Royal Baking Powder is the very best and PUREST Powder ever made. No other is so good. We give full measures. Sold by all grocirie men that know anything. Give a friend a box for Xmas for their cooking. There [are] half lb. boxes & Lb. boxes.

"PRESTO!"

Ten Cents a package. It will make the Best "Flap-Jacks" and "Griddle Cakes" you ever thought of tasting.

FORCE

The new and BEST breakfast Food. It is a nice flaky food. It will help make your Xmas Breakfast GOOD. What the Editor of this paper says:

Sir: I think "FORCE" is the very Best breakfast food I ever tasted and eat for nearly every breakfast time.

[Signature] C—— Day. Editor and prop. U. S. Journal Co.

FORCE CO. Buffalo, N. Y.,

Force is for sale by: F. L. Nolton, Grocier. B—— Mass.

The rare visits of painter, paper-hanger and plumber became seasons of special enjoyment, and to see the smiling, friendly doctor, with his mysterious black case, was well worth a cold or unhappy stomach. The "hired man," by very simple magic, in which circus yarns played an important part, easily aroused my interest in horses, lawnmowers and garden tools. A boy in the full flush of the family stage is a true country gentleman, with a keen eye to both kitchen and stable.

I had of course always followed my parents about more or less as they called upon their friends, but presently, at ten, I began to make calls all by myself. In perfect neighborly style I would step in at the door without knocking, reluctantly sit down, comment seriously upon the weather, and even venture a timid word or two upon the political situation—

always as a Republican. Then I would uneasily seek out the Sunday comic supplement or the latest illustrated magazine and relapse into silence, until perhaps some candy or pop-corn appeared, whereupon I referred again to the weather, praised the wit of the comic artist and perhaps mentioned a few latest happenings about village. I had learned my lesson well and was in a fair way to become a model neighbor myself. The Editor came to delight in visits, colds and innocent scandals:

Eva Smith is the only one who wore her Easter hat Sunday.

F. L. Nolton and Lewis Freeland each had their grocery wagons painted.

Apr. 5.—Willie Locke is building a hen house and will start with 12 hens.

Oct. 13.—Mr. Ladd was in town and went home on the 2 o'clock train.

Little Harry Seton is on the sick list.

Mr. Locke had a load of wood on the afternoon of Oct. 12.

Boy-hating neighbors of course took no more notice of me than ever, but those like Mr. Hunter, who was always interested in my garden, and Mr. Rollins, who gave me a stamp album, fully realized my growing importance and they returned many of my kindly attentions. If Mr. Hunter called at my house of an evening he often inquired for me, and remarked pleasantly on my rapid growth, my reported success at school, and paid me very marked attention withal. He began to take special notice of me on the street. I was no longer merely "one of the boys." I was now called out by my first name, and either Mr. Hunter or Mr. Rollins might stop to speak with me as I played on the sidewalk, much to the awe of younger fellows who could not as yet appreciate the meaning of true neighborliness.

In the narrow sense of next-door neighborliness the period of neighborhood interests was short, but in its broader community sense it persisted for several years, and the family fell into the background unless some member chanced to do something of community significance. The gossiping small boy was at his best at the age of nine, but the growth of a wide community interest was so gradual that it did not mature until three years later when the world interest had already become strong. The first dim visions of a world of men and action came through sundry social myths and traditions that were handed down to me by parents, teachers and older associates. I somehow missed Santa Claus, but I became well versed on Lincoln, Washington, Thanksgiving, and the national traditions in general. Each year, through drawings, decorations and detailed textual explanations, Journal readers were reminded of Kentucky log cabins, Crossing the Delaware,

the Declaration of Independence and the Coming of the Pilgrims. From a special Washington Birthday Number I quote:

. . . The only Joke on him was he cut down his father's cherry tree. People say that he never told a lie. He died of a cold.

ABOUT THE TREE

When his father see the cherry tree cut he went to his children and asked them who cut the tree down and when he came to George he asked him and George said, Father, [I] did it with my little hatchet and his father did not whip him because he did not tell a lie.

I had always followed the daily paper, yet it was not until I was ten that I really became at all interested in the world's news. At the time of the Cuban war the startling headlines and pictures attracted me considerably, but the attraction was due to the headlines themselves rather than to any genuine appreciation of the war or what it meant. I had heard that several townsmen had "enlisted" and "gone to the front," a place which seemed to be a long way from home, but I did not associate my townsmen particularly with the events so vividly spread over the first pages of the Extras. When the Boer and Boxer conflicts were at their height, however, my mind was more alert, and I began to realize the meaning of war. I watched the news closely and reported many of the greater battles to Journal readers.

This first contact with the outer world is marked in the Journal chiefly by the appearance of much so-called Make-Believe News. Arrived at the warrior age, with my active boyish imagination, I endeavored to create a world of my own. Instead of common-place real battles, the front page often announced sanguinary imaginary struggles in which I, always as General, led my troops to glorious victory. A Saturday afternoon skirmish with wooden guns and cracker-filled "knapsacks" gave rise to Sunday morning scareheads about dead soldiers and wrecked battleships, and a quiet hour at my desk resulted in royal diplomatic parleys between the kings and emperors of my imaginary world. (See author's "Child God," *Ped. Sem.* 1914, vol. 21, p. 309-320).

At length, confining my Make-Believe activities to mere day-dreaming, I began to take the world more as it was; and as I did so I passed from War to Tragedy. I was fascinated by murders and robberies, train wrecks, fires and tornadoes. About town even I was continually on the watch for the latest sensation. Our postmaster was likewise newsdealer, and each day I peered through the glass-faced postoffice boxes for a glimpse of the evening scare-heads; with a burning penny in hand it was only a toss-up between a lollypop and a red-lettered Extra. I became an Authority on the current murder trial, and my opinions of guilt or innocence were respectfully

tolerated by grown-ups. A local sensation was a wonderful event. If a store on Main Street were robbed of a few cigars and a dollar or two in cash, I carefully investigated the scene of the crime next morning, the while looking upon the unfortunate storekeeper with great awe and veneration. A fire was a mixture of shivers and thrills. As I listened, counting the whistle-blasts, my teeth chattered for fear the blaze might be near home, yet I was much elated at the prospect of rare excitement and destruction. The town was too small for murders and suicides, but cut fingers and sunstrokes served the purpose just as well, and for weeks after the victim's recovery I stared at him whenever we met on the street as a kind of hero, a man who had gone through an enviable experience through which few men were privileged to go.

During this tragic period the Journal inevitably became yellowish in tone. My presentation of news was decidedly sensational, and whether I treated of a cat's death or a man's my headlines were equally large. Even the commonplaces of household and neighborhood gossip became infected with hysterical journalism:

LOST IS FOUND!
But is Dead.—Lost Last
November.

April 15.—Last November we lost a kitten and found it in the water-pipe that goes out into the henyard dead. . . . It was a kitten. . . . its name was Snipce.

LOTS OF BIRTHDAYS!
All in the Town
of Templeford
Today. . . .

BAD LUCK.
But has started again.

April 3.—Clarence Day has got 8 chickekins hatch out of 52 eggs,

CHICKEN POX.

David Fisher one of the Journal's head men has chicken pox.

The leading headlines were at times two inches or more high, making them decidedly conspicuous on the Journal's modest five by eight sheets, and the news itself was often written in a dashing breathless style, much to the discomposure of polite spelling and grammar. Though the Journal Office was quite isolated from telegraph or telephone, the Editor showed no hesitancy in publishing many Latest Bulletins and Special Despatches.

I had been an editor nearly six years before I wrote an editorial. The Journal Editorial Page, which was a regular fixture almost from the beginning, was profuse with subscription rates and office regulations, but it was lacking in

editorials until I was ten, at the same time I became appreciative of the larger world. The first editorial comment, appearing under the head of "Chatterbox," was a curious mixture of personal, neighborly and worldly observations: one Chatterbox speaks of the January thaw, Queen Victoria's death, and my own recent purchase of a bottle of mucilage. But politics was soon to brush aside self, family and neighbors, and following a certain critical State fall campaign, editorial comment became thoroughly and permanently worldly in tone. Directly after the election I was stirred to write:

The REPUBLICANS are O. K.

Gaston [defeated candidate] to Bates; After you my dear Alphonse.

Gaston was too polite.

Poor democrats!

Politics, though of course on a higher plane than pure sensational tragedy, is scarcely less exciting. For the small boy there are thrills a-plenty in local elections and town-meetings; and if he keeps himself posted at all (as he must as a budding man-of-the-world) he can find no mean stimulation in the wild pre-election prophecies and straw-votes, the partisan bitterness, the Wall Street odds, the occasional "landslides" and all such phenomena. And, as he grows older and takes the interests of his Party at heart, as I did, he will come to feel an interest even in calm discussions of presidential timber and tariff prosperity.

It was at this time I became acquainted with the serious-minded Bernard Adams, later editor of the United States Memorial and junior partner of the Day and Adams Publishing Company, who was such an influence in making the Journal a "clean," conservative newspaper. My social conscience, like my paper, was ripe for a change, and Adams' preachments on social and economic evils I took over bodily, so that I worried a great deal about the Saloon, stock-gambling, and the sundry problems of capital and labor. In common with many wiser heads I believed the world was going to the bad, and that there was no hope for it, and what was there to be done about it? My editorials, now deservedly so-called, became downright pessimistic:

Where are the people of New England coming to? . . . There are so many murders and fires set to destroy property. . . .

. . . His cruel mess . . . of bull speculators, are still rising up the price of cotton so that the poor people will be unable to buy it for clothing. As long as they make money raising the prices of cotton and getting more money out of the poor people's pockets they don't care the least bit.

In this city . . . many divorces are being wanted by society people. They also gamble on the large scale and drink strong liquors and wine.

Many great people are dishonest, especially a great many office holders.

Closely allied with this pessimistic trend, we find a characteristic adolescent tendency to preach and moralize:

Whiskey drunkeness will often lead to death or serious injuries, and leave a family in a bad ways. A person that drinks liquor is as bad as a wild animal. A person should know enough to leave it alone. "Down with HORRIBLE liquor."

Be economical. Don't spend to much money on clothes, candy or other unnecessary articles. Save your pennies, for the[y] make dimes, save them, for they will turn to dollars. And doolars, when young, make you happy and comfortable in old age. . . . If you spend money lavishly when old you'll be unhappy and in debt. Then you can't live in you're own home, and will be sent to the poor house in debt. WHICH HAD THE YOUNG MAN AND WOMAN OF TO-DAY [RATHER] DO?

Much of the Journal's fiction reflects a similar moral attitude. In one story, for instance, after years of hard work and careful saving, accompanied all the while by brotherly and sisterly derision, James Bolton, the hero,

. . . retired, a man of $500,000 in his money room. He then [was] elected governor and kept office until his death, and left his two children a fortune. His brother and sister were also surprised. THE END. MORAL. "Be economical when young; live happy when old."

Yet not infrequently sheer selfishness came to the fore, and in some adventurous tale of the Alger or Oliver Optic type I easily doled out riches and happiness as rewards for mere physical hardship or hairbreadth escape. A serial, "Adventures Among the Andes Highlands," is characteristic; after the customary suffering at the hands of bloodthirsty Natives and a treacherous nature,

. . . They came upon some glittering bricks of gold and silver.

CHAPTER 4

This they gladly grabbed, put it into every pocket. They ate a mouthful of food and put the bricks in their napsacks. They then walked nearly half a mile when they came to the cave's end, and there below them appeared the city of Quito! They ran down to the wharves, boarded a steamer for San Francisco. They got here in a short time, sold their gold (except two bricks) for a million dollars. ($500,000 for each). They soon married in New Orleans and now own a home, stock office, and also have a fortune and children.

THE END OF JACK BERGINTON AND E. HERRSFORD.

My concern about bull speculators, divorces, drink, and the like persisted only a few months. Pessimism is not a natural youthful state for long, and due both to changes within and

the entrance of more optimistic schoolmates into my environment I came to see that there were a few good things in the world after all. The holiday dinners of the Salvation Army, the adoption of a gold money standard in Mexico, and the Panama Canal were all topics of interested news or editorial treatment. My comment, aside from the inevitable political bias, denotes a broad and hopeful outlook:

> We hope that the forming of the new Republic of Panama will result into having the isthmus be a land belonging to the United States. . . . This will give us a chance of building the canal at once. . . . Commerce can be done much cheaper and quicker. . . . In time it will save millions of dollars . . . so that the canal will be practically cheap.
>
> The election of the past week shows the spirit of the American people. They want the best man for president. . . . By this they elected Theodore Roosevelt. . . . They knew he was the best man.
>
> United States should have a larger and stronger navy at once. Nearly every important nation has a navy stronger than ours. Should there be a war . . . the cost of new battleships would be much less than the loss of a poor navy would come to.

At about fourteen the boy enters upon a new era in the development of his social conscience—an era of, as it were, Critical Synthesis. Before this age he has been passing down the gauntlet from Self to World, receiving as he goes occasional ideas and opinions which he absorbs in a wholly imitative, echoing sort of way; but now he must set about to reconstruct, to criticise, to synthesise. His earlier experience, up to this time more or less confused, slowly merges to form a consistent whole, and the new youth begins to talk vaguely about his "philosophy of life," or "creed," or "religion," or whatever he may please to call it. He evinces certain definite interests. He adopts an attitude. And, sooner or later, forced by the urgent, boastful inner man, he comes to feel that he must impress his views upon the world. Sometimes his views are not well received, it is true, but that matters little (save to jar a few tender feelings), for to him the all-important thing is self-expression. Nothing so enhances the synthetic process as to give the new, half-formed opinions an airing in speech or script.

Like all adolescents, I had a considerable variety of scientific interests, but affecting my social conscience most directly was perhaps the peculiar trinity of weather, hygiene and forestry. After keeping careful local weather records for several years and studying two or three convenient physical geography texts, and then becoming suddenly struck with the current false notions, especially among grown-ups, I attempted in a modest way to set things aright. My sister I completely converted; my father was open-minded, but apparently not convinced; other people, such as my aunt Nancy, who had been

brought up to believe in almanacs and sky-signs, were quite untouched by my vague discourses on "lows" and "highs," isobars and isotherms, unchanging seasons, and the like. The Journal occasionally presented short articles on weather topics, always emphasizing the scientific view, and reminding the reader of his probable stock of fallacies. Typical of this weather hobby is a school essay on "The Innocent Month of March," in which I prove, to my own satisfaction at least, upon a basis of three years' observations, that March is really much maligned, for "statistics prove the month to be generally calm, quite sunny, and a month of comparatively light rain and snowfall."

Having read one or two simple books on physiology and numerous popular "health" articles, I considered myself well-fitted to advise on matters of diet, ventilation and disease. I cherished many heretical doctrines, supposedly more or less unique, some of which I ventured to impress upon my elders. Never eat between meals, never be sick. Sit deliberately in draughts, be free from colds. Dry, steam-heated rooms are a direct invitation to death. Rain and dampness are absolutely harmless. Rheumatism is *simply* uric acid. In a school essay "Concerning the Air in the Classrooms" I fearlessly "muck-rake" the school officials for their sanction of ill-ventilated classrooms, and then proceed to enlighten them, with doubtful accuracy, on the function of oxygen and the blood in their relation to heart, lungs, and mental work.

Both in school papers and Journal editorials I became a staunch friend of the tree and forest conservation. Brush-fires and the annual Christmas-tree slaughter were my favorite themes. The great American Public was urged to watch out for its own welfare and the needs of posterity; for the sake of the Nation's future I pleaded with my readers to dispense with Christmas-trees, calling attention to the fact that nowadays we have good imitation trees which will please most children, and that perhaps the old fashion of "hanging the stocking" was the best way of celebrating, anyway.

These articles of scientific import were for the most part about things in general, and so far as they were critical, they were directed toward people in general. We find, however, that most criticisms of this adolescent period have a more personal reference. I was, perhaps, first of all self-critical, weighing carefully my own strengths and weaknesses, my abilities and shortcomings, contenting myself generally that my strengths and abilities were well in the ascendancy, despite occasional unhappy circumstances which led me at times to write very gloomy diary entries. The only marked failing that I saw fit to confess to the world was forgetfulness. Just

why I was so frank about this is uncertain, unless it was because I sometimes referred to my inborn forgetfulness as a reason for my aversion to certain dull, memory-drilling high school subjects. My most complete confession is embodied in a long essay on the "Trials of a Forgetful Boy." Very thinly disguised as "You," the Editor shows himself working in the garden-patch of a fine May morning, much handicapped by absent-mindedness and spring daydreaming. The short distance from garden to toolhouse is quite long enough to allow him to forget the hoe that he wants; it is utterly impossible to remember more than two items of a list of five on an errand that may be accomplished within three minutes; the call of he dinner whistle is the only force that can keep his mind on a straight track for any considerable period.

I was likewise family-critical, seeing in adolescence for the first time the serious human fallibilities as well as the heroic attributes of my relatives. It was at home, especially, that I became deeply susceptible to the jars and jolts of social contact. No where else did I seem to be so hindered by cross-purposes and conventions. My Editorial desk seemed always to be in the way of the merciless Household Machine. One paper, on "Exasperating Neatness," deals at length upon the evil of the morning dusting, an institution which appears to have been established particularly to keep the Editor's desk and bookcase in a perpetual state of confused arrangement. Protests of every kind were finding their way into script or print, as I met with some new reproof or was advised of some new convention. "Why Some Boys Enjoy Being Alone Occasionally" treats chiefly of "Bobby's" troubles with soiled neckties, table manners, unblacked shoes and bespotted clothes. "A Day With Jimmy" concerns one day's troubles of the average schoolboy, with oversleep, unhappy lessons, broken windows, and so on; while the sad lot of the boy during visits and week-end gatherings is duly bemoaned in "There's Going to be Company at Our House." Once or twice, even, the Journal was forced to cut down its size because of household turmoil. A very thin four-page April Journal contains this notice:

> THE REASON this week's Journal is so small . . . is that the editorial rooms are so disturbed and upset by the advent of spring housecleaning that it's nearly impossible to find a place to do the printing of the paper, to say nothing of trying to get together thots in the turmoil to think of any news. Spring is a fine season, but the poet who wrote of "beautiful spring" never had to undergo the tortures of the annual feminine spring housecleaning.

Bridge whist chanced to strike my community while I was in the middle of the high school course. Evening was my

favorite as well as most convenient time of study, and anything that interrupted me seriously immediately fell into ill grace. My home room was near enough the parlor so that when bridge whist nights came there was no getting French or German, if the need were never so desperate. An article appearing in one of the later Christmas Numbers explains the situation. The Craze is alleged to have instituted a "perfect reign of terror" for the innocent bystanding student, while the suffering sleeper is led to wish all sorts of dire calamities, like death and long journeys, upon the heads of his erstwhile friends. Mealtimes, too, are under the curse, for last evening's game, or the Rules, or plans for another party so occupy the general attention that a mere youth must go quite neglected when it comes to having things passed him, or getting his due proportion and balance of food and drink. It is the writer's parting wish "that since bridge whist seems to be a winter game, the present winter will be unusually short."

Then, again, at adolescence, I became neighbor-critical, taking more and more to heart the faults of my townsmen and the evils of the town. I had of course long been a gossip, but I had gossiped only as would a phonograph, for I had no very deep malice toward anyone personally, and there were few or no delicious little scandals that I had ever witnessed firsthand. Even the larger notorious town evils, as bad roads and rickety bridges, I had taken mostly second or third hand, rarely going out for myself to the case in point. Now, however, as I came socially more and more into competition with other young people, and called upon my neighbor as a sympathetic social being (rather than as a naïve young fortune-hunter in search of comics and candy), and strolled about town for a morning walk, I found marks for criticism upon every side.

I had a special antipathy for the Noisy Boy, having in mind probably a certain younger schoolmate who often proved a jarring element in my experience. His fullest treatment is in a school paper which takes for its text Poor Richard's "The worst wheel in the wagon makes the most noise." Pious young people, who attended social functions at the church next door, were also objects of criticism. An essay on "Incidents of a Church Supper" gives in detail a few of their noisy and neighbor-vexing pranks, such as leap-frogging over chairs in the vestry, tattoos played on the metal ventilator shafts, and general ill-treatment of the neighbor's lawn and garden. The writer is much comforted as he reflects, at the conclusion, that "these suppers come but once a month."

My neighbors, like all sober grown-ups who have settled down in life, were of course much given to social conventions

and the use of stereotyped rhetoric, so I, now a fresh new youth, with little respect for age and quite thoughtless of my own stereotyped future, took it upon myself to call attention to this human frailty. In such articles as "A Social Call on Your Neighbors" and "Mr. and Mrs. Jones Now Have a Furnace," my neighbor and his wife were both satirized for their excessively habitual conduct whenever I called and their unoriginal way of saying and doing things generally. A paper on "Stereotype Phrases—Do You Use Them?" considered particularly the matter of commonplace greetings and exclamations. But my neighbor's stupidity affected me most vitally when it chanced to intrude itself upon my work, especially my outdoor work upon the front lawn, where I was freely exposed to the view of passers-by. The "One Disadvantage of Working," as expressed in a long theme appearing under that title, is the answering of "an endless string of nonsensical questions" that your friends and neighbors inevitably put to you if they by chance catch you hard at work. Each assails you with sundry happy and ancient remarks on the state of weather or season, or diligently inquires "if you are working hard," or sarcastically exhorts you "not to hurt yourself."

Such little personal concerns bothered me considerably, as they do all adolescents, yet in the field of news interests—as embodied in the later Journals—petty gossip gave way largely to affairs of general community importance. I became enthusiastic about village improvement, town politics, and the larger small-town social events, as amateur theatricals, school receptions, baseball games, and band concerts. That Miss Smith was the only one to wear an Easter hat, or that Mr. Locke had a new load of wood no doubt continued to interest me (as a true villager), but these larger things interested me more. In editorial and special news "write-up" I mildly implicated the selectmen for their part in certain mysterious road-money expenditures and bridge-painting contracts, while the citizens generally were criticised for our sidewalkless streets, our inferior public buildings and the several ancient community eyesores. Nor did this broadened local appreciation mean that I cared for the world less than heretofore; instead, the world had become my standard and I would raise the town to its level. I began to realize, as I had never realized before, the many discrepancies and incongruities which our little village must display to the stranger, and I was in the midst of that particular period of youth in which familiarity breeds contempt rather than sentiment. Editorial comment of this type is characteristic of the time:

THIS WEEK'S "Alton Chronicle" states that the local hotel has been abandoned and the yard has been used for a horse pasture. This is true, but not only that, but the common, too, is used for that purpose. It may be healthy for young colts to run over the expanse of the common, but it is not especially beautiful or beneficial to the village's appearance.

. . . Puzzle:—If it takes the P. & N. 14 hours to clear 2 tracks from a slightly smashed snowplow and derailed engine, with two wrecking crews, how long would it take the same road to clear up a truly serious collision or freight wreck?

THE EXPECTED HAPPENS

As people all expected, the cars on the Tiltham Street Railway did not run yesterday on account of the stupendous snowfall of three or four inches. One unexpected thing did happen, however—the town had the sidewalks cleared shortly after noon.

Finally, I was world-critical. For some years, to be sure, I had been more or less critical of world morals and politics, but my attitude had been almost wholly imitative and impersonal. In this later stage, however, I began to see the world more in its relation to myself, as something very real which would sooner or later, as I entered upon active life, concern me very intimately. But this higher stage of criticism was only beginning when I was eighteen and so does not properly come within the present study.

There is no convenient escape from infancy, childhood or youth. They are planned from the beginning. But just what course they shall take is very largely determined by the social group. Nature is responsible for getting the youth to manhood, but nurture is responsible for the way in which he meets it, and what he does after getting there.

My father argued Republicanism and I at once became Republican. A friend decried yellow journalism and I at once became conservative in my newspaper management. My grandmother pondered much over the spiritualistic significance of dreams. I became interested in dreams. So it was with every early-life influence. Yet I became something more than a mere echo of my environment. My Republicanism was not exactly like my father's. I was not half so conservative as my friend, and my dream ponderings soon became scientific instead of spiritualistic. My small germ of "original nature" and my gradual accumulation of experience combined to modify each imitation into a half-original creation. Thus at eighteen I had a peculiar Republican bias, a preference for moderately conservative newspapers and a strong interest in dreams.

Parents appear sometimes to depend entirely upon heredity to bring out in the child certain social qualities which may have existed in the family. In some mysterious way the boy

will evolve from within a taste for manufacturing furniture, or the Methodist creed, or the family snobbishness; but it often happens that the youth, even upon the edge of manhood, has developed no marked furniture propensities, that his creed simply is not, and that he is absurdly democratic in his habits. A parent does not mold a child's character merely because he is parent; only as he sets actively about character-building does he achieve anything. The youth's mental background analyzed reveals few acquisitions from the passive people of the fireside, and his viewpoint is frequently that of an uncle, or someone entirely without the family circle. The strenuous crusader leaves a much greater impress than the shining example.

Even my most positive social companions made no special effort to direct my course, and thus I was left easy prey to impersonal influences in the form chiefly of newspapers and magazines. A majority of my tastes and interests seem to have been molded by reading. Printing of course was the most obvious outgrowth of this impersonal influence, while less directly evolved would be certain later interests in history, literature and science. So far as positive influence goes, school seems to have been one of the lesser incidents of my boyhood. Perhaps on one hand there were too many shining examples, on the other, perhaps there was too limited an opportunity for self-expression. Certainly school failed to make a very deep impression upon my editorial self; only in a few rare instances do "number work" and vertical script intrude upon the news columns of the early Journals, whereas the irrepressible Editor printed school exercises whenever he dared, and spent many school hours printing and drawing on waste sheets of paper. My editorial diction swayed between school models and home models, but the latter invariably won out. I may have had a particular school stent in mind when I chose to write an inanimate autobiography of a thermometer for the Journal, though with the first sentence I was talking Alger and Optic. Nor are my Brisbane editorials of the sensational era, my Dooley philosophies (Uncle Hiram), or my Shute's Real Diary mis-spellings (Jimmy's Letter) strongly suggestive of the school curriculum. School and teachers furnished me somewhat in ornament and technic, but editors and newspapers furnished me with ideas. The newspapers had the advantage of first impression, yet it seems that the elaborate mechanism of school should have been more influential than it actually was.

The boy himself is an important part of his environment. He is not entirely helpless, and his own creations have much to do with his social development. The Journal was certainly

a fact of first importance in my environment. In one respect its influence was strongly conservative, for the old files kept me in close contact with my own past, and the glamor of sentimental association kept me looking backward. Otherwise the paper was an agent of progress. Several hundred words' composition each issue was no mean rhetorical training, drawing and printing developed artistic interests, systematic arrangement and regular publication made for discipline, while past achievement ever stirred to emulation. Rivalry with one's own past is a fine stimulus to personal progressivism; and my own past self, with all its perfections and imperfections was continually mirrored back to me in the old copies of the United States Journal.

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THE SPEECH DEVELOPMENT OF A CHILD FROM EIGHTEEN MONTHS TO SIX YEARS

By Margaret Morse Nice, Norman, Oklahoma

In 1915 I published a paper on the speech development of my eldest child from eighteen months to four years. Since then I have collected her five and six year vocabularies. In the present paper her vocabularies are given at nine ages—14, 15, 16, 17 and 18 months, and three, four, five and six years. The eighteen month and three and four year vocabularies are repeated for several reasons. First, the five and six year vocabularies are simply added to the earlier ones, with the forgotten words indicated; so there is no repetition. Second, in my other paper I included proper nouns; in this they are omitted in all the vocabularies to bring them into line with what appears to be the best method of recording vocabularies. Finally, the child's development from year to year is shown.

E. is the eldest of three children. Her ancestry is Scotch-Irish, German and English on her father's side and Scotch-Irish and English on her mother's; she is in the fifth to the eighth generation in this country. Her father is a teacher of physiology in a medical school; her mother is a biologist. Her health has always been excellent; her height is slightly above the average, her weight slightly below. She is an active child, loving to walk in the woods and being an expert tree climber. From babyhood her greatest interest has been in nature, in flowers and especially all kinds of animals. She has a logical mind and inquires to the bottom of things; yet at times she has been decidedly imaginative. In the Binet test at three and a half years she tested four and two fifths; at six years she tested eight and one fifth. She is an original child and very little imitative. This last characteristic has its disadvantage in making it a slow process to correct her mistakes in English, but on the other hand she does not pick up slang, incorrect grammar or objectionable phrases from playmates or chance associates. She seldom uses a word unless she is sure of its meaning. She is not a talkative child and this of course makes it impossible to get her full vocabulary.

The Learning of Language. We have not tried to teach

our children to talk by telling them over and over again the simple words they are supposed to master first. E. went through no "parrot stage," never repeating words after her parents. She never merely imitated words but used them when she needed them. Apparently she did not begin to talk until she knew what her words meant; she never called men in general "Papa," nor animals any but their proper names, as some babies do.

She walked at thirteen months so that was all accomplished before she began to talk.

Her vocabularies for the first four months follow.

(T.W. means Total Words, N.W. means New Words.)
14 months. T.W.=3. Mamma, Papa. Bow-wow.
15 months. N.W.=1, T.W.=4. Bah.
16 months. N.W.=9, T.W.=13. Book, bird, Bobby (a doll), bread. Moo, r'r, umph. See. No.
17 months. N.W.=33, T.W.=46. Baby, boy, butterfly, car, card, choo-choo, Danny (a dog), ear, eye, Harold, hat, man, milk, monkey, moon, mouth, nose, Pye (original name for a doll), tail. Caw, cock-a doodle-doo, gobble, myow, quack. Cold, cunning, funny, poor, pretty. Please. Good-by, good-morning, goodnight.
Common nouns, 31. Proper nouns, 4. Verb, 1. Adverbs, 2. Adjectives, 5. Interjections, 3.

The appearance of the different parts of speech were as follows: nouns at 14 months, verbs and adverbs at 16 months, interjections and adjectives at 17 months, pronouns at 22 months; prepositions and conjunctions shortly after she was two. She said "No" at 16 months and "Yes" at 20.

We always spoke to her as "you," and of her by her name, yet she used her own name very little, probably because it was hard to pronounce. She called herself "Baby" exclusively from 17 months to 22 months when she learned the personal pronouns, "my," "I," and "you." She used both "Baby" and "I" until she was past two years. The time from the first use of "Baby" to that of using "I" was five months. Sentences of two words were first used at 19 months; the time therefore between the appearance of the first word and first sentence was five months.

Her Environments. E. has had a number of changes of residence. At 18 months she lived on the outskirts of Cambridge, Massachusetts; at three she lived near the center of Cambridge; since then her home has been in Norman, Oklahoma, while her summers are spent in the country near Amherst, Massachusetts. She has always had a fair amount of child companionship. From the age of three and a half to four and again from four and a half to five, she had the benefit of a little Montessori Nature Study Class meeting at her home in the morning. She has not been to a kindergarten,

nor had she received any formal education except that for about two months before she was six I started to teach her to read. She has heard a good deal of poetry, the best of the fairy stories, Kipling's "Jungle Books," the "Younger Edda," and much more literature adapted to her age. The most vital influence in her life has been nature—animals and flowers in Oklahoma and Massachusetts. She has had as pets, frogs, gold fish, pollywogs, rabbits, hens, chickens, turtles, horned toads, lizards, salamanders, snails, caterpillars, crawfish, toads, snakes, a puppy and a young robin.

The Vocabularies. The 18 month vocabulary was obtained by keeping a record of all the words used up to that time. The three year vocabulary was taken for one month before the child's birthday. The four year vocabulary was collected for three months before her fourth birthday, the first two in order to get words used in Oklahoma and traveling which she doubtless would not have forgotten, but not have had opportunity to use in Massachusetts. The five and six year vocabularies were taken entirely in Massachusetts for one month before and one month after her birthday. It seems to me impossible to get a full vocabulary of children over three unless they happen to be very talkative, for they know so many words that they do not have occasion to use during the time under observation. E. talks less in the summer, when I collect her vocabulary, than at any other time, for being with many people she spends most of her time listening, especially as her almost constant companion is a decidedly loquacious boy cousin a year older than she. She was asked directly what certain things were, but this method was used only in trying to get former words repeated. Some of these former words were elicited by conversation, but not very many, for she resents apparent attempts to probe her intelligence. The words were recorded from her conversations; at no time when I have taken her vocabulary has she engaged in much of any imaginative play. If she had done so, her vocabularies would doubtless have been larger but probably less exact. Now, at six and a half, she plays a great deal with toy animals, having them experience most exciting adventures; she, meantime, using a large vocabulary, much of it new, but some of it apparently used imitatively without the meaning being known as clearly as when she employs words in conversation.

At no time has she had any idea that her words were being recorded. She is used to seeing me write at all times and when we were outdoors and she asked me what I was writing, I told her what was perfectly true, that I was putting down the names of the flowers and birds we were seeing. I would rather not have my children know they were under observa-

tion; there would be danger of making them conscious. E. would probably have talked less if she had known it; D. our second daughter might have talked more.

Pelsma ('10), Boyd ('14), and Bateman ('14, '15, '16), seem to have adapted the method of elimination that is fairest all around and that is most adaptable to different ages. I will quote Bateman's ('16) rules here.

"1, no proper nouns; 2, no plurals unless the singulars were not used; 3, all forms of pronouns are included; 4, no variants of verbs or adjectives unless sometimes from different roots; 5, the same word may be listed more than once according to its grammatical use by the child."

Boyd ('14) in his study of his daughter's speech development made a suggestive classification of his child's nouns into fourteen divisions according to interests. Using Boyd's work as a basis, I combined several of his classes and grouped them all into four main divisions, adding one—words from pictures and stories—so as to show the sources of her words. It is sometimes a little difficult to decide where words should go; the method I used was this. A word is put into that division where the child first used it or is most vividly impressed with it; for instance, to E. as a baby, clothes-pins and spools were much more playthings than objects of household use, therefore they go under "Play;" thimbles, thread and needles, she had no personal use for and they go under "House." "Words from pictures and stories" comprise all those nouns that are not learned from real life, yet they are words that she adopted into her play or conversation; a large number of animal and bird names find their place here. As she later learned some of these from real life they are transferred into their appropriate classes, the change being indicated by a star followed by the year when this took place. Many words drop out of a child's vocabulary; they may be lost permanently or they may reappear in later years. Parentheses ( ) around a word show that it dropped out; if followed by one or two numerals it reappeared in the years indicated, as in the four year vocabulary (anxious),[5] "anxious" being used at four and five but not at six; or in the three year vocabulary (soil)[4and6], "soil" being used at three, four and six, but not at five. All words without parentheses were used every year after they first appeared. N.W. means New Words; T.W. means Total Words.

NOUNS.

1½, 102; 3, 625; 4, 975; 5, 1371; 6, 1751.

I. *Personal Experiences.*

1½, 40; 3, 226; 4, 290; 5, 400; 6, 502.

1. Body.
   1½: T.W.=11.
   Ear, eye, finger, foot, hair, hand, head, knee, mouth, nose, toe.
   3: N.W.=20; T.W.=31.
   Arm, bones, cheek, chin, curls, face, forehead, heart, heel, lap, leg, lip, nail, neck, shoulders, teeth, throat, thumb, tongue, tummy.
   4: N.W.=8; T.W.=39.
   Back, blood, brain, lungs, mucous, skin, (skull), voice.
   5: N.W.=19; T.W.=57.
   Bladder, bloodvessel, body, buttocks, chest, dimples, elbow, eyebrows, fist, muscles, pores, ribs, saliva, soles, stomach, tears, toe-nail, urine, wrist.
   6: N.W.=12; T.W.= 69.
   Backbone, gums, hip, jaws, knuckles, marrow, nostrils, perspiration, spinal cord, sweat, taste-bud, voice-box.

1a. Health.
   3: T.W.=8.
   Alcohol, bite, castor oil, cold, enema, olive oil, sliver, witch hazel.
   4: N.W.=8; T.W.=16.
   Bacteria, disease (measles)[6], (mumps), poison, scab, tummy ache, (vaccination).
   5: N.W.=12; T.W.=25.
   (Ammonia), hiccough, (malaria), medicine, scar, scarlet fever, scratch, sickness, sores, sting, (sunburn), (ventilation).
   6: N.W.=14; T.W.=36.
   Appendicitis, camphor ice, camphorated oil, chicken pox, chill, cut, dose, iodine, indigestion, pills, tonic, upset, vaseline, whooping cough.

2. Clothes.
   1½: T.W.=9.
   Button, coat, didy, hat, mitten, pin, pocket, shoe, spot.
   3: N.W.=32; T.W.=41.
   Apron, band, belt, bloomers, buckle, button hook, chain, clothes, collar, drawers, dress, garter, handkerchief, hooks, leggins, night gown, overalls, ribbon, romper, rubbers, safety-pin, sandals, shirt, skirt, sleeping bag, slippers, stocking, sweater, wrapper. Hole, (stain), tear.
   4: N.W.=3; T.W.=44.
   (Material), socks, sunbonnet.
   5: N.W.=15; T.W.=57.
   (Ankle tie), boots, cap, dicky, (embroidery), lace, (mackintosh), moccasin, (sash), (streamers), stripes, tennis shoes, underclothes, waist, (wraps).
   6: N.W.=17; T.W.=66.
   Bonnet, button holes, cape, clothing, elastic, fastener, garment, jacket, necklace, petticoat, raincoat, sleeves, straw, style, under shirt, straw, union suit.

2a. Toilet.
   1½: T.W.=3.
   Bath, comb, soap.
   3: N.W.=7; T.W.=10.
   Brush, cotton, powder, tangle, tooth brush, tooth powder, towel.

4: N.W.=1; T.W.=11.
Snarl.
5: N.W.=3; T.W.=14.
Soap-dish, sponge, wash-cloth.
6: N.W.=2; T.W.=16.
Soap-suds, sponge-bath.

3. Food.
1½: T.W.=6.
Bread, milk, orange juice, potato, salt, water.
3: N.W.=50; T.W.=56.
Apple, apple-sauce, bacon, banana, beets, berries, biscuit, broth, bun, butter, cake, carrots, cheese, cherries, chocolate, coffee, corn, corn bread, corn flakes, cracker, cream, cream of wheat, crumb, crust, doughnuts, drink, egg, graham crackers, grapes, ice cream, junket, macaroni, meat, nut, oatmeal, orange, peach, peanut, pear, peas, pudding, pumpkin, raspberry, rice, soup, strawberry, sugar, tapioca, tea, toast.
4: N.W.=9; T.W.=65.
Beans, cereal, cookies, food, jelly, lettuce, onions, prunes, radish.
5: N.W.=15; T.W.=80.
Beef, candy, chocolate rolls, cocoa, frosting, fudge, loaf, muffin, (mush), pepper, peppermint, pickles, pie, sandwiches, sugar lumps.
6: N.W.=11; T.W.=91.
Asparagus, baking powder, cream cheese, educator, dough, gingerbread, gruel, pop-corn, short-cake, tomatoes, walnuts.

3a. Eating.
1½: T.W.=3.
Bib, dish, spoon.
3: N.W.=17; T.W.=20.
Bell, breakfast, crack, cup, dinner, dining table, dining room, fork, knife, lunch, napkin, pitcher, plate, supper, table cloth, tea-kettle, tray.
4: N.W.=4; T.W.=24.
Bowl, dessert, meal, nibble.
5: N.W=3; T.W.=27.
Feast, saucers, slice.
6: N.W.=3; T.W.=30.
Ladle, nick, tablespoon.

4. Play and Occupations.
1½: T.W.=8.
Block, boat, box, jar, stick. Book, card, paper.
3: N.W.=43; T.W.=51.
Ball, balloon, bank, beads, bubbles, cans, cart, clothespins, doll, drum, game, pail, peg, penny, present, race, rattle, sandpile, shovel, sled, spool, string, tower, toys, treasure, valentine, wagon, wheel, wheelbarrow. Catalog, crayons, dance, magazine, music, page, paints, pencil, picture, poem, post card, song, story, words.
4: N.W.=28; T.W.=79.
Bar, (captain), creature, croquet, leader, plasticine, pole, procession, see-saw, slide, soap-bubbles, swing, tag, Teddy-bear, tricks. Blackboard, buttoning frames, circle, cylin-

ders, exercise, insets, letters, line, map, mark, school, square, (triangle).

5: N.W.=17; T.W.=94.
Canoe, cattle car, (cock-horse), cord, cradle, den, earthquake, jewel, marble, rag, somersault, swimming pool, (tea-cup), tea-party, trowel, wigwam. Apparatus.

6: N.W.=49; T.W.=141.
Ark, basket ball, blots, chalk, collection, compass, contraption, cowboys, fire crackers, flexible flier, foot ball, hiding place, hunt, jack o' lantern, mallet, net, nickle, paddles, parquetry, paste, pedals, plane, possessions, puzzle, raft, rocking-horses, snowball, sparklers, strainer, torpedoes, trench, tricycle, velocipede, yarn. Address, calendar, cardboard, diamond, dictionary, encyclopedia, globe, history, kindergarten, lesson, pad, pattern, poetry, rhyme, tales.

4a. Experiences.

3: T.W.=9.
Dream, hug, kiss, nap, rest, shadow, sleep. Bang, noise.

4: N.W.=3; T.W.=12.
Journey, picnic, trip.

5: N.W.=34; T.W.=46.
Drive, job, party, play, quarrel, reflection, ride. (Crackle), crash, (rap), (slam), sound, (splash), squeak, squeal, (tap), (whisper), whistle. (Bound), bump, fall, fight, hold, jump, leap, (pat), (peek), pull, (push), (rising), (run), (rush), (slip), (whack).

6: N.W.=23; T.W.=54.
Airing, collision, expeditions, feats, frolic, lick, sale, sniff, squabble, task, treat, visit. Call, knock, patter, rustle, screeching, shout. Flash, jerk, load, tug, tumble.

II. *Indoor Environment.*

1½, 14; 3, 122; 4, 150; 5, 187; 6, 209.

1. House and Furnishings.

1½: T.W.=12.
Bathtub, bed, cellar, chair, clock, coal, door, floor, house, key, light, table.

3: N.W.=94; T.W.=106.
Ashes, basin, basket, bathroom, bedroom, blanket, book case, bottle, broom, bureau, candle, candlestick, ceiling, chamber, chest, chimney, closet, cloth, cork, couch, crib, curtain, cushion, desk, drawer, dust, duster, envelope, fire, fireplace, furnace, gas, glass, glue, hall, hammer, hammock, (hamper)[4], handle, hanger, heater, high chair, home, ink, lamp, looking glass, mantel piece, match, mirror, nail, needle, newspaper, oven, pan, parlor, pen, piano, pillow, pipe, post, roof, room, rope, rug, scissors, screen, screw, sewing machine, shades, sheet, shelf, sideboard, sofa, stairs, stamp, strap, stove, telephone, thimble, thread, trunk, tub, typewriter, umbrella, veranda, wall, wall paper, wash stand, waste basket, weighing machine, window, wire, wood.

4: N.W.=22; T.W.=128.
Axe, bench, board, bundle, cupboard, electricity, flames, mop, package, (pantry)[5], porch, refrigerator, register, rocking chair, saw, sleeping porch, stopper, study, suit case, tank, tools, (varnish).

5: N.W.=34; T.W.=160.
(Banister), castor, china, blotter, faucet, fireless cooker, furniture, gasolene, hallway, (hat-rack), kitchen, knob, (junk), leather, (microscope), pillow-case, plaster, play-room, (railing), ruler, screen-door, set, soot, spark, steps, store-room, sun-porch, tag, thermometer, vase, violin, (wardrobe), wax, window-sill.

6: N.W.=24; T.W.=177.
Aluminum, attic, case, chute, cot, counterpane, decoration, dish pan, flashlight, fringes, icebox, mattress, pewter, pin cushion, puff, quilt, rack, screw-driver, shoe bag, shutter, spout, tack, tape, window pane.

2. Other's Belongings.

1½: T.W.=2.
Bag, muff.

3: N.W.=14; T.W.=16.
Camera, fan, glasses, gloves, hairpins, hatpin, lather, money, necktie, purse, sack, suspenders, trousers, watch.

4: N.W.=6; T.W.=22.
Bracelet, film, overcoat, revolver, suit, trimming.

5: N.W.=5; T.W.=27.
Beard, gold, ring, tie, whiskers.

6: N.W.=5; T.W.=32.
Dollar, nipple, shawl, sword, veil.

III. *Outdoor Environment.*

1½, 25; 3, 184; 4, 356; 5, 505; 6, 658.

1. Civilization.

1½.5: 3, 45; 4, 81; 5, 128; 6, 148.

1½: T.W.=5.
Barrel, car, go-cart, sleigh, (choo-choo).

3: N.W.=41; T.W.=45.
(Arch)[5 & 6], automobile, barn, bicycle, bonfire, building, carriage, church, circus, city, engine, factory, fair, farm, fence, field, flag, gate, (hurdy-gurdy), laboratory, mail-box, path, road, roller skates, sail boat, seat, smoke, station, steamboat, steam engine, store, street, subway, ticket, town, track, train, trolley-car, tunnel, (watering cart)[4], yard.

4: N.W.=38; T.W.=81.
Baggage-car, (bran)[5], bridge, (bridle), bungalow, countries, dining car, fire-engine, fireworks, fly trap, fountain, garage, garden house, grain, grindstone, gun, hay, head-light, henhouse, kite, mail, (observation car), parade, reins, roadside, (runabout), saddle, scare-crow, sidewalk, smoker, state, (steeple), (teams), trap, university, village, whip, woodshed.

5: N.W.=52; T.W.=128.
(Ball-game), (belfry), bricks, brooder, caboose, cannon, (cartridge), celebration, cinders, coop, (couplings), crank, eaves, ditch, (ferryboat), freight car, (highway), hinges, hoe, horn, hose, incubator, jitney, (junction), kerosene, ladder, lawn, lawnmower, (local), museum, pavement, rail, railroad, rake, rust, shed, shingles, ship (shorts), staff, stake, stonewall, summer-house, switch, tent, tie, tire, turnaround, water meter, well, woodpile.

6: N.W.=31; T.W.=148.
Alley, baggage, brake, buggy, campus, delivery wagon, dining-hall, elevator, fire-lane, fire department, grave, grave-yard, keg, machinery, mill, mill wheel, pillars, pitch-forks, rubbish, sawmill, separator, signboard, smash-up, spikes, stable, steel, strips, trap-door, trash, water-trough, wreck.

2. Sky and Landscape.
1½: T.W.=3.
Moon, sky, snow.
3: N.W.=27; T.W.=30.
Air, bank, clouds, country, dirt, ground, hill, ice, lake, mountain, mud, ocean, pond, puddle, rain, river, rock, sand, shade, spring, stars, sun, sunshine, thunder, valley, (weather)[4], wind.
4: N.W.=15; T.W.=45.
Brook, island, lightning, pool, rainbow, sea, shower, stones, storm, stream, sunset, (Venus)[6], waves, (whirl)[5], world.
5: N.W.=21; T.W.=64.
Breeze, daylight, (downpour), flood, foam, frost, icicles, land, ledge, meadow, mica, mist, moonlight, pasture, prairie, sunlight, stepping-stones, sunbeams, temperature, view, waterfall.
6: N.W.=20; T.W.=81.
Backwater, boulder, burrow, canal, dam, darkness, earth, fertilizer, hollow, moisture, mound, pebbles, quartz, quick-sand, rainfall, shore, source, swamp, trap rock, water vapor.

3. Plants.
1½: T.W.=2.
Flower, grass.
3: N.W.=21; T.W.=23.
Buttercup, (daffodil)[4 & 6], daisy, dandelion, (lilac)[4], oaks, ragweed, rose, violet. Bark, fern, flowerpot, (grove)[4], leaf, log, oakball, plant, pollen, seed, thorns, tree.
4: N.W.=57; T.W.=80.
(Anemone)[6], blueberry, blue-eyed grass, bluets, chick-weed, clover, column flower, (coreopsis)[6], evening prim-rose, (flea-bane)[6], forget-me-not, (four o'clock), horse-nettle, lily, (mustard)[6], (neck-weed), Nothoscordum, (pepper-grass)[6], pine, poison ivy, poppy, poppy mallow, shepherd's purse, spring beauty, sumach, sweet peas, thistle, (toadflax), (Venus' looking glass), (wood sorrel), (yellow puccoon). Acorn, acorn cups, blossom, branch, briar, bud, bush, moss, pine cone, pine-needle, root, stem, vine, weeds, woods. Apple-tree, cabbages, corn, currants, garden, gooseberries, gourds, grape vine, peach tree, pear tree, wheat.
5: N.W.=36; T.W.=103.
(California poppy), cedar, elm, (fox-glove), golden rod, huckleberries, (iron plant), juniper, (Madeira vine), maple, milkweed, mountain laurel, pansy, (pink yarrow), St. John's wort, (sheep laurel), (snap dragon), steeple-bush, white birch, (white yarrow), wild roses, yellow clover. (Bur), fungus, lichen, limb, mushroom, petals, pitch, (pods), toadstool, twig. Corn stalk, orchard, (vege-tables), vineyard.

6: N.W.=50; T.W.=142.
Amanita, arbutus, balsam apple, bellwort, blueflag, buffalo bur, checkerberry, columbine, coral mushroom, cowslips, fringed polygala, grey birch, hawkweed, hellebore, Jack-in-the-pulpit, lady slipper, maiden hair fern, mulberry tree, nasturtium, peony, pitch pine, poet's narcissus, poison sumach, puff ball, saxifrage, shad bush, skunk cabbage, smartweed, sweet fern, trillium, water lily, wild geranium, wild oats, wood betany. Bouquet, bulbs, crops, evergreens, forest, mould, nectar, pistil, sap, seed vessel, spines, sprout, stalks, stamens, stumps, water plants.

4. Animals.*
1½, 15; 3, 86; 4, 150; 5, 210; 6, 286.

a. Insects.
3: T.W.=10.
Ant, bee, beetle, bug, bumblebee, butterfly, caterpillar, fly, mosquito, wasp.
4: N.W.=19; T.W.=29.
Cockroach, cricket, cutworm, drone, flea, grasshopper, grub, honeybee, insect, ladybug, moth, plant lice, (queen bee)[5], walking stick, (worker bee). Bee-hive, buzz-buzz, honey, swarm.
5: N.W.=6; T.W.=34.
Blue-bottle fly, dragon-fly, fire-fly, horse fly, water-striders. Hornet nest.
6: N.W.=17; T.W.=49.
Caddis, gnat, katydid, lice, maggots, rose-bugs, silver fish, tent caterpillar, whirligig beetle. Abdomen, cells, chrysalis, feelers, honey-comb, larva, secretion, tentacles.

b, Other Invertebrates.
3: T.W.=3.
Snail, spider, shell.
4: N.W.=6; T.W.=9.
Angleworm, crawfish, daddy-long-legs, worm, cobwebs, spider webs.
5: N.W.=1; T.W.=10.
(Crawdaddies).
6: N.W.=6; T.W.=15.
Leech, lobster, mussel shell, slug, sow-bug, mites.

c. Fish, Amphibians, Reptiles.
1½: T.W.=1.
Frog.
3: N.W.=7; T.W.=8.
Fish, goldfish, pollywog, snake, toad, turtle. (Fish food)[4].
4: N.W.=6; T.W.=14.
Horned toad, lizard, salamander, tadpole, terrapin. Aquarium.
5: N.W.=11; T.W.=24.
Black snake, bull frog, Dinosaur, leopard frog, snapping turtle, (swamp tree frog), tortoise, wood frog. Fish-line, prickles, scales.
6: N.W.=17; T.W.=40.
Box turtle, butterfish, common toad of the western plains, garter snake, grass snake, green frog, milk snake, minnows, northern frog, painted turtle, pickerel frog, spotted turtle, spring peeper, trout. Coils, fins, membrane.

* For other animal names look under "Words from Pictures and Stories."

d. Birds.

1½: T.W.=5.
Bird, hen, rooster. Caw-caw, cock-a-doodle.

3: N.W.=22; T.W.=27.
Bluejay, chickens, duck, eagle, English sparrow, goose, (grackle)[4 & 6], hawk, (junco)[4], pigeons, sea-gull, swan, turkey, woodpecker. Bill, cages, dust baths, feather, gobble-gobble, nest, quack, wing.

4: N.W.=19; T.W.=46.
Bobwhite, chewink, chicadee, (cock)[5], dickcissel, dove, duckling, king bird, meadow lark, mocking bird, night hawk, parrot, peacock, phoebe, robin, whippoorwill, wren. Chicadee-dee, droppings.

5: N.W.=20; T.W.=65.
Chipping sparrow, cardinal, cowbird, crow, (drake), fowls, (great crested fly catcher), (hairy wood pecker), ovenbird, partridge, pelican, (poultry), red-headed woodpecker, swallow. Comb, crest, down, (nest box), note, perches.

6: N.W.=29; T.W.=89.
Bantam, bobolink, brown thrasher, canary, cat-bird, cedar waxwing, chimney swift, flicker, gander, hummingbird, indigo-bird, oriole, penquin, scarlet tanager, scissors-tailed fly catcher, song sparrow, thrush, vireo. Breast, crop, earlobe, flock, fluff, mate, nestlings, peep-peep, roup, tuft, wattles.

e. Mammals.

1½: T.W.=9.
Cow, dog, horse, kitty, puppy. Bow-wow, moo, meow, tail.

3: N.W.=29; T.W.=38.
Bear, bunny, calf, camel, cat, deer, donkey, elephant, fox, goat, kittens, lamb, lion, monkey, mouse, oxen, pig, pussy, rabbit, rat, sheep, skunk, squirrel, tiger. Bah-bah, umph, umph. Fur, horns, pet.

4: N.W.=14; T.W.=52.
Baboon, bat, Belgian hare, buffalo, bull, chipmunk, guinea pig, jack rabbit, mules, pony, 'possum, raccoon, sea lion. Wool.

5: N.W.=25; T.W.=77.
Animals, cattle, colt, grey squirrel, nanny-goat, polar bear, ram, red squirrel, wood chuck. Bark, claw, grunt, paw, snort. [Epithets used in talking to or of animals] (Chatter box), climber, (dawdler), dear, dearie, fellow, (jumper), lazybones, (sleepy-head).

6: N.W.=21; T.W.=94.
Beasts, billy goat, cotton-tail, elk, fawn, heifer, pups, seal, sow. Bristles, cud, female, flesh, hoof, horse-hair, male, pest, prey, skeleton, walker, young.

IV. *People.*

1½, 7; 3, 23; 4, 38; 5, 58; 6, 74.

1½: T.W.=7.
Baby, boy, girl, lady, Mamma, man, Papa.

3: N.W.=16; T.W.=23.
Aunt, brother, child, cousin, father, grandma, grandpa, mother, sister, uncle. Friend, people, visitors. Carpenter, clown, teacher.

4: N.W.=15; T.W.=38.
Family, grandchildren, son, person. Baker, cook, conductor, doctor, (driver), fisherman, iceman, policeman, porter, (student), (sugar-plum).

5: N.W.=23; T.W.=58.
(Babe), daughter, grandmother, husband, parents, wife, woman. Crowd, (master), neighbors. Barber, fireman, (hunter), sailor, (storekeeper), (twins), washerwoman, workmen. Darling, (runner), slow-poke, (sweetheart), (terror).

6: N.W.=24; T.W.=74.
Adult, ancestor, bride, bridegroom, infant, relatives, tot, youngsters. Company, guests, group, maiden, playmates, tribe. Agent, artist, cavalry, dentist, farmer, naturalist, partner, servant, sleeper, thrower.

V. *Words from Pictures and Stories.*

1½, 14; 3, 18; 4, 43; 5, 64; 6, 89.

1½: T.W.=14.
Bear*[3], butterfly*[3], duck*[3], fox*[3], monkey*[3], mouse*[3], owl, rat*[3], snail*[3]. Buttercup*[3]. Bah-bah*[3], gobble-gobble*[3], r'r [for lion], umph, umph*[3].

3: N.W.=16; T.W.=18.
Alligator*[6], (lambikin)[4]. Mallard duck, oriole*[6], reindeer, thrush*[6], wolf. (Bower)[4], (bugle)[4], crown, (market)[4]. Angel, fairy, king, queen, (robbers)[4].

4: N.W.=25; T.W.=43.
Armadillo, (badger), crab, crocodile, (ferret), giraffe, hedgehog, jackal, kangaroo, porcupine, spider monkey, whale, wild-cat, zebra. (Pot). Dragon, dwarf, (enemy)[6], giants, (heaven)[5], (shepherd), (spirit)[6], tailor, unicorn, witch.

5: N.W.=32; T.W.=64.
Angel fish, cobra, coral snake, coyote, (cub), lioness, lobster*[6], mongoose, otter, rattlesnake, scorpion, starfish, walrus, weasel, wild boar. Castle, (cudgel), (jail), jungle, palace, (stile), submarine, throne, (trumpet). Devils, (ghost), (magician), (mayor), ogre, princess, volcano, war.

6: N.W.=35; T.W.=89.
Beaver, bighorn, chuck-will's widow, copperhead, dolphin, elephant bird, Gila monster, heron, leopard, moose, myas, ostrich, panther, peccary, puma, rhea, rhinoceros, shark, sloth, tern, toucan. Airship, enchantment, lodge, magic, shield, tepee. Army, attendants, battle, champion, hero, imps, knight, mermaid, settlers.

VI. *Abstract, Time, Position, etc.*

1½, 2; 3, 52; 4, 98; 5, 157; 6, 219.

1. Time.

3: T.W.=9.
Birthday, day, minute, morning, night time, o'clock, spring, time, today.

4: N.W.=15; T.W.=24.
Afternoon, age, bedtime, evening, half-past, month, night, summer, to-morrow, tonight, week, winter, while, year, yesterday.

* These words were learned from real life in the years indicated.

5: N.W.=6; T.W.=30.
Daytime, moment, (nightfall), second, suppertime, wedding.
6: N.W.=6; T.W.=35.
Half-hour, holiday, hour, instant, noon, rate.

2. Position.
3: T.W.=11.
Back, bottom, corner, cover, edge, end, front, middle, place, side, top.
4: N.W.=3; T.W.=14.
Beginning, row, (tippity-top).
5: N.W.=9; T.W.=22.
Center, curve, inside, midst, opening, outside, space, tip, (tip-top).
6: N.W.=10; T.W.=30.
Arrangement, cubby-hole, direction, file, gap, outline, patch, point, twists.

3. Quantity.
1½: T.W.=1.
Pieces.
3: N.W.=6; T.W.=7.
Bit, drops, half, inches, part, pile.
4: N.W.=7; T.W.=14.
Amount, lot, miles, numbers, (pairs), rest, speck.
5: N.W.=10; T.W.=23.
(Bunch), chunk, clump, deal, dozen, heap, lump, (pint), scrap, trace.
6: N.W.=7; T.W.=28.
Group, hordes, masses, quarter, remains, share, spoonful.

4. Indefinite.
3: T.W.=7.
Anybody, anything, everybody, everything, nothing, somebody, something.
4: N.W.=1; T.W.=8.
Nobody.
5: N.W.=0; T.W.=8.
6: N.W.=0; T.W.=8.

5. Abstract Nouns.
1½: T.W.=1.
Pity.
3: N.W.=17; T.W.=18.
Attention, color, confusion, enough, fun, heat, help, joke, kind, matter, mistake, name, smell, stuff, thing, trouble, way.
4: N.W.=20; T.W.=38.
Account, adventures, care, fault, comparison, (dryness), experiments, (feelings)[5], harm, joy, life, mind, (question)[6], (self)[6], (sight)[6], (sign)[5], sort, taste, thought, work.
5: N.W.=40; T.W.=74.
(Accident), answer, (blackness), (chance), custom, damage, death, (disaster), energy, (fear), foolishness, habit, (happiness), (hunger), (idea), (language), (law), (length), nature, (notion), nuisance, plan, (power), promise, (protection), punishment, reason, reward, secret, sense, shape, size, suffrage, (talk), (thirst), truth, use, waste, (weight), (wonder).

6: N.W.=61; T.W.=118.
Advice, affairs, anti-suffrage, art, blame, blessing, burden, caution, choice, civilization, danger, desire, difference, discovery, dispute, disturbance, effect, example, freedom, fuss, gains, government, gravity, grief, handicap, height, hindrance, hurry, lie, looks, luck, manners, nonsense, object, order, pleasure, plenty, problems, progress, pursuit, sake, scheme, shelter, sort, strength, suggestion, surprise, tribulations.

VERBS.

1½, 10; 3, 246; 4, 380; 5, 521; 6, 638.
1½: T.W.=10.
Caught, cry, dance, fall, gone, kiss, look, pat, see, sing.
3: N.W.=236; T.W.=246.
Am, amuse, answer, aren't, (arranging)[4], ask, bark, be, belong, bite, (bless)[4], blow, bother, bounce, break, bring, brush, build, bump, burn, burst, button, buy, call [cry], (call [visit])[4], can, care, carry, change, chase, chew, clap, clean, climb, comb, come, cook, cough, could, count, cover, creep, cross, crow, cuddle, cut, die, dig, do, draw, dream, dress, drink, drop, dump, dust, eat, excuse, fasten, feed, feel, fight, fill, find, fit, fix, fly, fold, gargle, get, give, glue, go, grab, grow, guess, hang, happen, hatch, have, hear, help, hide, hit, hold, hook, hop, hope, howling, hug, hunt, hurt, hurry, is, isn't, jump, keep, kick, kneel, knock, know, laugh, leak, lean, leave, let, lie [recline], lift, like, listen, live, lock, lose, mail, make, march, mark, mean, measure, meddle, mend, might, mind, mix, muss, named, need, obey, open, ought, pack, paint, paste, pay, peek, pick, pin, pinch, play, poke, pound, pour, press, prick, pull, push, put, rain, rap, reach, read, rest, ride, ring, rock, rub, run, sail, save, scratch, see-saw, send, sew, shave, shine, shoo, show, shut, sit, sleep, slide, smash, smell, sneeze, snow, (snuggle)[4], (soil)[4 & 6], spank, spill, spit, splash, squeak, squeeze, stand, stay, step, stick, sting, stop, stuff, stumble, suppose, swallow, sweep, swim, take, talk, tangle, taste, tear, tell, thank, think, throw, tickle, touch, try, tumble, turn, unbuckle, undo, undress, unfasten, unlock, unwound, visit, wait, wake, walk, want, was, wash, watch, wave, wear, weigh, went, wet, whistle, wiggle, will, wind, wipe, wonder, would, write, yell.
4: N.W.=134; T.W.=380.
(Acquainted)[6], attending, back, bake, beat, begged, believe, bend, (blast), bleed, borrow, buried, breathe, butter, buzz, (concerned), crack, crawl, (crinkle), decorated, decided, despise, (disgusted), drag, drip, drive, dry, (dye), encourage, evaporate, (explain), fishing, flap, float, forget, gallop, gnaw, gobble, greet, growl, grunt, (grumble), hand, harness, hate, haul, (imagine), invite, lay, learn, lick, light, love, manage, married, meet, (moo), move, must, nail, nibble, nip, nod, (order), own, peck, plant, poison, pop, prance, pretending, punch, punish, (quarreled), raised, rattle, (represent), remember, rescue, rinse, (rob)[6], roll, rush, say, scamper, scrape, scream, scrub, scuttle, seem, sell, set, settle, sharpen, shook, shoot, sigh, skin, skip, slips, sniffing, sound, sprang, sprinkle, squashing, (squirm), start, stealing, suck, (suit), swell, swing, (tease), tip,

treat, travel, (trooping), tug, twist, understand, untie, used, (vaccinate), wade, warm, waste, (weed), (weep), whip, whisper, (whoop), wither, wish, work.

5: N.W.=172; T.W.=525.

(Act), (annoy), (baptize), bear, (behave), (bellowing), blot, bound, (bubble), (bunting), burrow, butted, camp, (celebrate), (chapped), choke, (chop), christened, clear, cling, (cock), (collapse), complain, (contradict), (cool), (couples), crank, crash, croak, crowd, crumple, cure, curl, dare, (darkened), dash, dawdle, delay, desert, digested, (disappear), (disobey), (distress), disturb, dive, (droop), drown, (exhausted), expect, explore, (fade), (fan), fattened, feast, finished, (flaming), (flashed), followed, fool, (force), (fretting), frozen, gather, grieve, guard, guide, heal, hinder, hurl, (interfere), jiggle, (joke), kill, land, last, (latch), lend, (loosened), match, matter, miss, (nab), notice, (paddle), (part), (peer), perch, pile, (place), plan, please, (practice), promise, protect, realize, roar, roost, (rose), (ruined), rustling, quiet, scared, scatter, (scold), scramble, (screw), (seats), (seize), shall, shall, shelter, should, shrink, (sicken), (slam), (splash), smoke, smoothe, snap, snip, spatter, speak, spend, spoil, spread, spurt, squeal, (squirt), startle, (stained), starve, steer, stooping, (storm), strain, stretch, struggle, study, (sunk), sunning, support, (sweat), (swooping), (tack), teach, telephone, (tempt), tired, toss, (train), (tremble), (trickle), (trimmed), trip, (trot), (trust), tuck, twinkle, unbutton, (unfold), (unlaced), (unrolling), (unwrap), upset, urge, (waddle), wander, warn, water, whack, wriggling, (wrinkled).

6: N.W.=178; T.W.=638.

Accomplished, aches, afford, alight, allowed, arose, arrived, attached, attack, bait, balance, bandaged, bang, batters, bathing, become, began, benefited, bind, blame, blind, blocked, blossomed, boiled, boost, bow, breed, bruised, carve, charging, cheer, choose, circle, clashing, close, colored, compared, concealed, connect, consider, continued, copy, correct, crumbling, crushed, curving, dabble, dampened, darted, daubing, deal, decay, decline, defend, depend, descended, deserve, destroyed, developed, disagree, displease, divide, dotted, drains, dwell, enjoy, escape, examine, exterminate, fear, fertilize, flitting, flow, formed, frisking, gained, giggle, gleaming, glided, grind, gulp, handle, harden, hibernate, increased, interrupt, invented, investigate, irritates, itches, jabbed, jammed, lead, leap, lined, lolling, may, melts, mislaid, mistaken, nosing, note, number, nurse, object, offered, parading, passed, pattering, peep, perish, planed, prevent, preserved, progressing, pronounce, puff, quarantined, recognize, refuse, returned, rhyme, risk, roamed, rout, scoop, scorched, scorns, scowling, secrete, serves, shaded, shaping, shed, shiver, shout, shovel, shriek, slap, slay, sloped, snatched, snoring, soared, split, spun, squabbling, squalling, stir, stoop, store, straighten, strap, strew, strike, stub, succeed, suggest, supply, sway, tamed, tied, tingle, track, trapped, trapsing, trouble, trudge, trumpeting, untangle, venture, wallow, wheel, whizzing, wig-wag, won, wounded, yelp.

PRONOUNS.

1½, 0; 3, 30; 4, 32; 5, 41; 6, 44.

I. *Personal.*

3: T.W.=18.
He, her, hers, him, his, I, it, me, mine, my, myself, she, they, them, we, you, your, yours.
4: N.W.=2; T.W.=20.
Our, us.
5: N.W.=6; T.W.=26.
Herself, himself, itself, ourselves, their, yourself.
6: N.W.=1; T.W.=27.
Thou.

II. *Relative.*

3: T.W.=1.
What.
6: N.W.=1; T.W.=2.
That.

III. *Interrogative.*

3: T.W.=3.
What, which, who.
5: N.W.=1; T.W.=4.
Whose.

IV. *Demostrative.*

3: T.W.=4.
That, these, this, those.
5: N.W.=1; T.W.=5.
One.

V. *Adjective.*

3: T.W.=4.
All, other, some, same.
5: N.W.=1; T.W.=5.
Any.
6: N.W.=1; T.W.= 6.
Another.

ADJECTIVES.

1½, 10; 3, 139; 4, 232; 5, 348; 6, 415.

I. *Article.*

3: T.W.=1.
A.
5: N.W.=1; T.W.=2.
The.
6: N.W.=0; T.W.=2.

II. *Demonstrative.*

3: T.W.=12.
Another, any, each, every, other, same, some, such, that, these, this, those.
4: N.W.=1; T.W.=13.
Alike.
5: N.W.=2; T.W.=15.
Either, neither.
6: N.W.=0; T.W.=15.

III. *Interrogative.*

3: T.W.=2.
What, which.

IV. *Quantitative.*

3: T.W.=13.
All, (double)[4 & 6], few, last, many, most, several. One, two, three, four, five, hundreds.

4: N.W.=10; T.W.=23.
Both, first, next, none, whole, six, seven, eight, nine, ten.

5: N.W.=5; T.W.=28.
Less, only, second, single, (third).

6: N.W.=0; T.W.=28.

V. *Qualitative.*

1½, 10; 3, 111; 4, 193; 5, 301; 6, 382.

1. Color.

3: T.W.=15.
Black, blue, brown, gold, green, orange, pink, purple, red, white, yellow. Bright, colored, dark, shiny.

4: N.W.=7; T.W.=22.
Grey, rosy, scarlet, tan, (violet). Light, striped.

5: N.W.=8; T.W.=29.
(Blackish), greenish, (pinkish), reddish, (yellowish). Pale, (pure), spotted.

6: N.W.=8; T.W.=34.
Bay, brownish, burnt sienna, olive green, purplish. Brilliant, speckled, whitish.

2. Spatial.

3: T.W.=13.
Big, far, fat, full, high, large, little, long, low, near, small, steep, tiny.

4: N.W.=8; T.W.=21.
Deep, great, level, monstrous, short, thin, tall, (wee-wee).

5: N.W.=17; T.W.=37.
Chubby, close, farthest, flat, front, hind, (hollow), mighty, narrow, round, solid, straight, thick, tremendous, upper, weeny, wide.

6: N.W.=4; T.W.=41.
Crooked, curved, overgrown, slim, stubby.

3. Sense.

1½: T.W.=1.
Cold.

3: N.W.=14; T.W.=15.
Cool, greasy, hard, hot, icy, sticky, sopping, soft, sore, stiff, sunny, sweet, warm, wet.

4: N.W.=11; T.W.=26.
Buttered, bloody, curly, firm, heavy, moist, rough, slippery, smooth, soapy, sour.

5: N.W.=12; T.W.=38.
Bitter, damp, delicious, dry, light, lukewarm, oily, rainy, saltier, scratchy, shady, watery.

6: N.W.=2; T.W.=40.
Raw, redhot.

4. General.

1½: T.W.=9.
Cunning, dirty, funny, good, nice, poor, pretty, sleepy, tired.

3: N.W.=59; T.W.=68.
Afraid, alone, ashamed, asleep, (astonished)[4], awake, (awful)[4], bad, bare, best, busy, careful, clean, cloudy, comfortable, (cute), dangerous, darling, dead, dear, disappointed, discouraged, dusty, empty, fast, fine, friendly, glad, happy, holey, hungry, kind, lovely, merry, naughty, new, old, open, queer, quiet, right, ready, rubber, shut, sick, slow, sorry, south, surprised, stupid, (tender)[4], terrible, thirsty, tight, wide open, windy, wrong, withered.

4: N.W.=57; T.W.=124.
Alive, angry, (anxious)[5], barefoot, beautiful, brass, brave, (breezy), careless, (cheerful), (cleverest), common, delighted, different, (eager)[5], early, excited, fierce, fluffy, gay, gentle, (grown-up), (horny), (interested), iron, jolly, late, left, live, lonely, loose, north, own, (precious)[5], prickly, prompt, proud, quick, real, (rich)[5], ripe, rotten, safe, scared, set, silver, (spandy), splendid, stale, still, sure, tame, west, wild, (whirling), wooden, young.

5: N.W.=84; T.W.=197.
Able, active, (attractive), blunt, bothersome, bushy, (chuckling), constipated, (contented), crazy, (cross), (deadly), deaf, delicate, (dizzy), downy, (dried-up), (dull), east, easy, (even), (exciting), fair, feathery, fond, foolish, fresh, greedy, horrid, (horrible), important, inky, interesting, lame, (left-hand), lively, magic, main, mean, nasty, (odd), (patient), perfect, (pointed), poisonous, (ragged), (regular), (right-hand), rocky, rude, ruffled, (ruffly), rusty, scrambled, sensible, sharp, shy, silly, (solitary), (stormy), (strange), strong, surprising, swampy, (swift), (terrific), thorny, through, tiresome, true, ugly, uncomfortable, (unfair), (ungrateful), unhappy, unpleasant, untidy, weak, (weakly), well, (wicked), wise, wonderful, worst.

6: N.W.=90; T.W.=253.
Acrobatic, alarming, ancient, apt, awkward, barbed, bold, bony, bound, calm, capital, cheap, chief, copper, cultivated, dandy, delightful, difficult, dilapidated, doubtful, dumb, economical, enchanting, equal, especial, expensive, familiar, famous, fit, flowery, foggy, forked, free, furious, fuzzy, generous, grand, gorgeous, half-worn, harmless, harsh, hateful, helpless, horrified, home-made, impatient, inconvenient, industrious, liable, mad, miscellaneous, mistaken, naked, natural, neat, pebbly, pitiful, powerful, rare, remarkable, rid, ridiculous, roly-poly, royal, sandy, savage, secret, serious, sheltered, silent, sluggish, snaky, snarly, sound, spiny, steel, stray, sudden, thankful, ticklish, unbreakable, unprotected, untidy, unwilling, usual, vicious, washable, waterproof, weary, worth, worth-while.

Adverbs.

1½, 6; 3, 62; 4, 102; 5, 158; 6, 166.

I. *Time.*

3: T.W.=11.
After, again, always, ever, first, never, now, once, sometimes, then, when.

4: N.W.=7; T.W.=18.
Ago, before, finally, soon, still, usually, yet.

5: N.W.=6; T.W.=24.
Already, at last, forever, later, seldom.
6: N.W.=1; T.W.=25.
Afterwards.

II. *Place.*

1½: T.W.=3.
Down, there, upstairs.
3: N.W.=20; T.W.=23.
Along, anywhere, away, behind, downstairs, here, in, indoors, inside, near, next. off. on. out. outdoors, outside, over, under, up. where
4: N.W.=12; T.W.=35.
Around. across, back, everywhere, far, farther, nearby, somewhere, through, underneath, upside down, way.
5: N.W.=14; T.W.=49.
Ahead, apart, backwards, forth, forward, (half-way), home, (nowhere), overhead, past, right, (to and fro), (wherever), wrong side out.
6: N.W.=6; T.W.=51.
Above, below, beyond, deeply, hither, thither.

III. *Manner.*

3: T.W.=12.
Carefully, exactly, horseback, how, nicely, quickly, right, slowly, so, together, well, why.
4: N.W.=10; T.W.=22.
Anyway, (awfully), apparently, better, busily, fast, headfirst, promptly, perfectly, terribly.
5: N.W.=31; T.W.=52.
(Angrily), badly, (beautifully), carelessly, (directly), easily, finely, for instance, gently, (gayly), happily, hard, (horribly), (however), instead, kindly, (neatly), poorly, really, (sadly), simply, somehow, (sorrowfully), suddenly, surely, terrifically, tightly, truly, (unfortunately), (untidily), (vigorously).
6: N.W.=13; T.W.=53.
Anyhow, certainly, cheaply, diligently, entirely, lazily, lightly, peacefully, properly, regularly, roughly, rudely, soundly.

IV. *Degree.*

1½: T.W.=1.
All.
3: N.W.=10; T.W.=11.
Almost, as, else, enough, just, like, more, quite, too, very.
4: N.W.=9; T.W.=20.
A little, either, even, mostly, much, only, pretty, rather, especially.
5: N.W.=5; T.W.=25.
Barely, hardly, nearly, somewhat, (tremendously).
6: N.W.=4; T.W.=28.
Absolutely, at least, chiefly, scarcely.

V. *Modal.*

1½: T.W.=2.
No, please.
3: N.W.=3; T.W.=5.
Not, perhaps, yes.

4: N.W.=2; T.W.=7.
Maybe, possibly.
5: N.W.=1; T.W.=8.
Of course.
6: N.W.=1; T.W.=9.
Probably.

PREPOSITIONS.

1½, 0; 3, 21; 4, 23; 5, 32; 6, 33.
3: T.W.=21.
About, across, after, against, before, back of, behind, beside, between, by, for, from, in, of, off, on, through, to, under, up, with.
4: N.W.=2; T.W.=23.
Except, without.
5: N.W.=9; T.W.=32.
Above, around, at, beneath, but, into, over, towards, upon.
6: N.W.=1; T.W.=33.
Betwixt.

CONJUNCTIONS.

1½, 0; 3, 7; 4, 8; 5, 14; 6, 15.
3: T.W.=7.
And, because, but, if, so, than, whether.
4: N.W.=1; T.W.=8.
On.
5: N.W.=6; T.W.=14.
In order to, though, till, unless, until, while.
6: N.W.=1; T.W.=15.
Since.

INTERJECTIONS

1½, 5; 3, 9; 4, 13; 5, 13; 6, 13.
1½: T.W.=5.
Goodbye, good-morning, goodnight, hello, howd'you do.
3: N.W.=4; T.W.=9.
Oh, ouch, peek-a-boo, why.
4: N.W.=4; T.W.=13.
(All aboard), (dear me)[5], ha-ha-ha, well.
5: N.W.=1; T.W.=13.
Hooray.
6: N.W.=1; T.W.=13.
Goody.

TABLE I

THE PARTS OF SPEECH—NUMBER OF WORDS

Age in years	1½	3	4	5	6
Nouns	102	625	975	1,371	1,751
Verbs	10	246	380	525	638
Pronouns	0	30	32	41	44
Adjectives	10	139	232	348	415
Adverbs	6	62	102	158	166
Prepositions	0	21	23	32	33
Conjunctions	0	7	8	14	15
Interjections	5	9	13	13	13
Total	133	1,139	1,765	2,502	3,075

The Grammar of the Vocabularies. At 18 months E's vocabulary contained 133 words; at three years 1,139 words; at four years, 1,765 words; at five, 2,502 words and at six, 3,075. Table I gives the numbers of the different parts of speech at the five different ages, and Table II gives their percentages.

TABLE II

PERCENTAGE OF THE PARTS OE SPEECH

Age in years	1½	3	4	5	6
Nouns	76.6	54.8	55.3	55.0	56.8
Verbs	7.6	21.6	21.5	20.8	20.7
Pronouns	0	2.6	1.8	1.6	1.5
Adjectives	7.6	12.2	13.1	14.0	13.7
Adverbs	4.5	5.4	5.8	6.2	5.4
Prepositions	0	1.8	1.3	1.3	1.0
Conjunctions	0	0.7	0.5	0.6	0.5
Interjections	3.7	0.9	0.7	0.5	0.4
Total	100.0	100.0	100.0	100.0	100.0

The percentages of the parts of speech are much the same at three, four, five and six years. From three to six there is a slight increase in the proportion of nouns and a slight decrease in the verbs, pronouns, prepositions, conjunctions and interjections. Adjectives and adverbs rise till they reach a maximum at five and then drop again at six yet not quite as low as they were at four years.

It is interesting to observe the increase of the different parts of speech from year to year using the vocabulary of the year before as a basis.

TABLE III

THE INCREASE OF THE PARTS OF SPEECH

	From three to four	From four to five	From five to six
Nouns	56.1	40.6	26.2
Verbs	54.1	38.1	21.5
Pronouns	6.6	28.1	7.3
Adjectives	66.2	50.0	19.2
Adverbs	64.5	55.0	5.0
Prepositions	9.5	39.1	3.1
Conjunctions	14.3	75.0	7.1
Interjections	44.4	0.0	0.0
Whole vocabulary	55.7	41.2	25.0

The increase in the whole vocabulary diminishes very rapidly, from 55 per cent between three and four, to 41 per cent

from four to five, and was only 25 per cent from five to six—that is, the six year old vocabulary was only 25 per cent larger than the five year vocabulary.

Nouns follow the percentage of the whole vocabulary closely each year; verbs fall slightly below it. Pronouns, prepositions and conjunctions have small increases at four and six, but large at five. Adjectives and adverbs make very large gains at four and five, but very slight gains at six.

Words Dropped Out. The older the child gets the larger is the proportion of words found in one vocabulary that did not reappear in the next. We cannot be sure how many of these are really forgotten. The following tables must not, therefore, be considered as conclusive but as only giving an indication of where the most words were dropped out.

TABLE IV

WORDS DROPPED OUT

	Numbers		Proportions	
	At five years	At six years	At five years	At six years
Nouns	57	153	4 per cent of remembered nouns	8 per cent
Verbs	27	92	5 per cent of remembered verbs	14 per cent
Adjectives	14	52	4 per cent of remembered adjectives	12 per cent
Adverbs	1	18	0.6 per cent of remembered adverbs	11 per cent
Interjections	1	2	8 per cent of remembered interjections	15 per cent
Total	100	317	4 per cent of the whole vocabulary	10 per cent

It will be seen that at five, four per cent is the proportion of the words forgotten to the whole vocabulary; nouns, verbs and adjectives follow this closely. But at six the proportion of forgotten words to the whole vocabulary has risen to ten; nouns are below this, with eight per cent, while verbs have 14 per cent, adjectives 12 and adverbs 11. One explanation for the high percentage of verbs may be that identical situations did not arise year after year to call them forth. At five, E. for some reason added a large number of adverbs and adjectives bringing her proportions in these parts of speech in her whole vocabulary to the highest point they ever reached. At six, her percentages of these parts of speech dropped back nearly to the four year level; therefore it is to be expected that she must have given up using many of these five year terms.

Of the adjectives it is almost entirely those from the general qualitative division that are dropped out. With the adverbs at six years, one of degree was forgotten, four of place and 13 of manner. It is interesting to examine the nouns in detail to see where the majority were dropped out.

TABLE V

PER CENT OF NOUNS DROPPED OUT IN PROPORTION TO THOSE REMEMBERED IN EACH DIVISION

Age in years	5	6
Personal experiences	1.7	6.5
Indoor environment	1.0	4.5
Outdoor environment	5.0	8.2
Pictures and stories	11.0	20.0
People	0.8	5.0
Abstract, time, etc	4.0	12.0

It will be noted that stories have the largest percentage of forgotten words, that abstract words come next, then outdoor environment; then personal experiences, with people and indoor environment about equally small. The largest item in personal experiences are the 15 words under "experiences" denoting sounds and actions in which E. seemed to specialize at five, but used very little at six. Forgotten names of flowers are responsible for most of the outdoor words, and change of environment was the reason for forgetting them. That abstract words and stories furnish the largest percentages is what we would expect since these cannot be as vivid to a child as those words learned from real life. The words from stories are naturally changeable as the stories she hears each year are largely different.

As to the number of words forgotten from the different years, in the five year vocabulary, 24 were dropped from the three year vocabulary and 76 from the four year, that is, 24 per cent and 76 per cent. In the six year vocabulary 20 were lost from the three year vocabulary, 76 from the four year and 221 from the five year, or 6, 24 and 70 per cent respectively. (Of the 76 lost words from the four year vocabulary, 63 are identical for five and six, while 13 are different.) The interesting point about the proportions is the large number of words lost from the last preceding vocabulary. This means of course that the earlier words are the fundamental ones. But it also shows that there is a fluctuation in the words used by this child, that is, she apparently uses certain words for a while and then drops them in favor of others. This is evident from the large numbers of verbs, adverbs and adjectives she used at five and did not use at six, and to a less

degree those she used at four and did not use in one or other of the following years. I have additional evidence of this change in words since I took a partial vocabulary at five and a half, noting down the new words I heard without paying much attention to her speech. In this way I got 103 verbs, 30 adjectives, 7 adverbs and 173 nouns—many from stories and many abstract—none of which appear in her five and six year vocabularies. Thirty words that were new at five and a half, were repeated at six. Now at six and a half I hear her using a great many new words, some of them old ones that were left out of her five and six year vocabularies. It may be that environment and associates have a good deal to do with the matter; in the winter she sees mostly her parents and sisters, while in the summer she hears words from her cousins and other relatives. This explanation would not hold for the difference between the five and six year vocabularies, for in these cases the environment and associates were very much the same. It may well be that the speaking vocabularies of adults fluctuate in much this same way.

Rate of Learning. The rate of learning, as the vocabularies stand, is as follows: three words in the 14th month, one word in the 15th, one word every third day in the 16th, 1.5 words a day in the 17th month and three words a day in the 18th month. From the 18th month to three years the rate of learning was 2.1 words a day; from three to four, 1.7; from four to five, 2 words; and from five to six, 1.6. But if the forgotten words are not subtracted—and they should not be when the number of new words learned is being considered—then the rate of learning for the last two years is 2.3 words a day between four and five, and 2.5 words a day between five and six.

Mistakes and Omissions. In the former paper there were mentioned various mistakes and omissions in E's vocabulary. Of auxiliary verbs she used "can," "could," "might," "will," "would" at three years, "shall" and "should" at five, and "may" shortly after. "If" was used in connection with "whether"—"whether if"—from three years till past five, but the "if" was dropped at five and a half. "What" was her only relative until this same age when she began to use "that," but she had not added "which" or "who" at six. "The" was not used until 57 months, "a" being employed on all occasions. On none of these mistakes was she corrected by us, except on "what" as the relative.

E. learned "she" and "our" correctly, but at about two and a half substituted "her" and "we'er." At 51 months she used the proper terms about equally with the incorrect ones; at 53 months she had dropped the latter entirely. She

had used "I'm are" and "more better" until 51 months but corrected them herself at 53 months. Her mistakes now at six and a half are "matter of" instead of "matter with;" "it is" instead of "there is," and "tooken" instead of "taken."

In the former paper E's pronunciation was described in detail; her progress since then will be noted. At 55 months "sm" was "m" as "'mell;" "sp," "b" as "'bider;" "sk," "g" as "'gunk;" "st," "d" as "'done;" "th," "s" as "sistle;" "dh," "d" as "dat," "y," "l" as "lard," and "ing," "in'." At 57 months she had mastered "dh" and "y;" at 58 months "sk," "sp" and "st;" at 59 months "sm" and "th," and at five years "ing." She was not drilled on

TABLE VI

NUMBER OF NOUNS

Age in years	1½	3	4	5	6
Body	11	31	39	57	69
Health	0	8	16	25	36
Clothes	9	41	44	57	66
Toilet	3	10	11	14	16
Food	6	56	65	80	90
Eating	3	20	24	27	30
Play and occupations	8	51	79	94	1 41
Experiences	0	9	12	46	54
I. Personal experiences	40	226	290	400	502
House	12	106	128	160	177
Other's belongings	2	16	22	27	32
II. Indoor environment	14	122	150	187	209
Civilization	5	45	81	128	148
Sky and landscape	3	30	45	64	81
Plants	2	23	80	103	142
Animals	15	86	150	210	287
III. Outdoor environment	25	184	356	505	658
IV. Pictures and stories	14	18	43	64	89
V. People	7	23	38	58	74
Time	0	9	24	30	35
Position	0	11	14	22	30
Quantity	1	7	14	23	28
Indefinite	0	7	8	8	8
Abstract	1	18	38	74	118
VI. Abstract, time, etc	2	52	98	157	219
Total	102	625	975	1,371	1,751

any of these mispronunciations after she was three years and nine months old. At five she was pronouncing entirely correctly except "noo" for "new," although she said "music" correctly. Since then she has attained "ew."

The Content of the Vocabularies. Nouns. The nouns at the different ages were divided into five main classes and 21 smaller divisions to show their sources.

TABLE VII

PERCENTAGES OF NOUNS

Age in years	1½	3	4	5	6
Body	10.9	5.6	3.1	4.1	3.9
Health	0	1.2	1.7	1.8	2.0
Clothes	8.8	6.6	4.6	4.1	3.7
Toilet	2.9	1.5	1.2	1.0	0.8
Food	5.9	8.4	6.7	5.8	5.0
Eating	2.9	3.1	2.6	2.0	1.7
Play and occupations	7.9	8.2	8.7	7.0	8.5
Experiences	0	1.6	1.1	3.3	3.1
I. Personal experiences	39.3	36.2	29.7	29.1	28.7
House	11.8	16.9	13.1	11.5	9.4
Other's belongings	1.9	2.6	2.2	2.0	1.8
II. Indoor environment	13.7	19.5	15.3	13.5	11.2
Civilization	4.9	6.8	8.3	9.0	8.4
Sky and landscape	2.9	5.5	4.7	4.7	4.7
Plants	1.9	3.7	8.2	7.6	8.3
Animals	14.9	13.5	15.5	15.5	16.5
III. Outdoor environment	24.6	29.5	36.7	36.8	37.9
IV Pictures and stories	13.7	2.9	4.4	4.7	5.2
V. People	6.8	3.4	3.7	4.2	4.3
Time	0	1.5	2.6	2.3	2.1
Position	0	1.7	1.4	1.6	1.7
Quantity	0.95	1.1	1.4	1.7	1.6
Indefinite	0	1.1	0.8	0.6	0.5
Abstract	0.95	3.1	4.0	5.5	6.8
VI. Abstract, time, etc	1.9	8.5	10.2	11.7	12.7

At 18 months personal experiences loomed largest to the baby, being responsible for 39 per cent of her nouns; outdoor environment came next with 24 per cent; indoor environment had a small representation, only 13.7 per cent; while pictures and stories had an equal proportion due to her limited experience, for all but one of these words were names

or sounds of animals. People were important having 6.8 per cent, and abstract terms were very few, only two in number or 1.9 per cent of all her nouns.

At three, personal experiences had dropped a little, from 39 to 36 per cent; people had decreased from 6.8 per cent to 3.4 and pictures and stories from 13.7 to 2.9. Indoor environment rose from 13.7 to 19.5 per cent; outdoor environment from 24.6 to 29.5 and abstract from 1.9 to 8.5. At four there was another decided change: a large drop in the importance of personal experiences to 29 per cent and indoor environment to 15 per cent, a rise in words pertaining to people, —3.7,—pictures and stories—4.4—and abstract terms —10.2 per cent—and a large rise in outdoor environment to 36.7 per cent. The five and six year vocabularies have carried out these same tendencies but there have been no decided changes except in indoor environment, which dropped from 15.3 per cent to 11.2.

Taking the five vocabularies as a whole, there is a continuous decrease in personal experiences from 39.3 per cent at 18 months to 36.2 at three years, 29.7 at four, 29.1 at five and 28.7 at six. Outdoor environment shows a steady increase from 24.6 to 29.5, 36.7, 36.8 and 37.9 per cent. Abstract, time, position, etc., also show an unbroken rise from 1.9 to 8.5, 10.2, 11.7 and 12.7 per cent. Words denoting people and those from pictures and stories have a high proportion at 18 months, drop to a minimum at three years, and then gradually increase in the following years. Indoor environment is rather low at 18 months, reaches its maximum at three and then falls decidedly each year, reaching the 18 month level at five and falling below it at six.

Of the smaller divisions, those that have uniformly increased throughout the five vocabularies are words pertaining to health, animals and abstract terms; while those denoting clothes and toilet have steadily decreased. The other divisions though in general increasing or decreasing, show fluctuations that are not always possible to explain. Words denoting food rose at three, because the 18 month proportion was very small; after that they declined steadily, at six years going below the 18 month level. Words relating to parts of the body fell decidedly at three and four, rose again at five and fell a little at six. Play and occupations have staid about the same, while experiences show an almost uniform increase.

Words from the outdoor environment of civilization increase in all the vocabularies except the last where there is a slight fall. Sky and landscape are 2.9 per cent at 18 months, 5.5 at three and 4.7 per cent for the three following years. Words relating to plants show a tremendous increase at four—from

3.7 per cent to 8.2; they decreased slightly at five, and increased again to 8.3 at six.

These results are not just what I expected. When the great change in the proportions of the nouns at three and four years was apparent, I thought this would continue at about the same rate. It has continued, but at a much lessened rate. There are two factors to be considered: the development of the child and the influence of environment. At four, five and six years the environments were much the same, a village in Oklahoma throughout the fall, winter and spring, and the country in Massachusetts in the summers. At three the environment was decidedly different—that of a city in Massachusetts, although the child had much opportunity to see plants and animals. It seems as if the change of environment may have had more to do with the change in the distribution of her words than her own development had, since the five and six year vocabularies are so much like the four year.

Comparison with other children as to interests. Bateman ('16) has given the proportions of the nouns under "sources of materials" according to my method of divisions in the case of his two daughters and niece at the age of 28 months. The personal experiences of these three run from 53 to 61.5 per cent, indoor environment from 20 to 23.5 per cent, outdoor environment 8.7 to 12.2; words from books 0 to 2.9; people from 2.4 to 3.8; and abstract terms from 2.5 to 7.0 per cent. In comparison to E. at 18 months and three years, these children have much larger percentages from personal experiences and much smaller from outdoor environment than she.

Bohn ('14) follows Boyd's ('14) divisions for his child from nine months to twenty-seven months. I have added them up for 18 months, two years and 27 months, grouping them so that they correspond to my own main divisions. At 18 months his daughter had 120 nouns in her vocabulary; at two years, 315; and at 27 months, 481; proper nouns are omitted in these counts. Her proportions run as follows for the three ages: personal experiences, 45.8, 30.5, 25.6 per cent respectively; indoor environment, 28.3, 38.1 and 32.1 per cent; outdoor environment, 20, 21.3 and 28.8 per cent; people, 3.4, 2.7 and 3.7; abstract, etc., 2.5, 7.7 and 9.8. Here we see a continuous decrease in personal experiences, and increase in outdoor and abstract terms. Indoor environment rose to a maximum at two and then fell at 27 months; words relating to people decreased at two and rose again at 27 months. At 18 months this child's vocabulary seemed fairly typical, with personal experiences most important, indoor environment sec-

ond in numbers and outdoor environment third. But at two, indoor environment outstripped all others, and at 27 months, although its lead was less, it still had the most words. The unusual thing about this child is her small proportion of personal experiences and very large proportion from indoor environment. There may be some difference in the classification; certain words that others put under personal experience Bohn had probably included under "house" and "domestic." She has a large proportion from outdoor environment and at 27 months a great number of plant names —41. She also has a large percentage of abstract terms for so young a child.

Prof. Boyd very kindly supplied me with the proportions of nouns in his daughter's total vocabularies at three, four and five years and has given me permission to publish them.

TABLE VIII

PERCENTAGES OF NOUNS OF BOYD'S DAUGHTER

Age	17 months	3 years	4 years	5 years
Body	10	6.5	5.3	4.6
Health	0	2.6	3.2	3.2
Dress	17	9.5	8.2	6.9
Food	14	7.3	6.3	6.5
Play	10	5.9	6.9	6.8
Experiences	0	2.1	3.9	4.1
Personal experiences	51	33.9	33.8	32.1
House	0	3.4	3.9	3.5
Domestic	18	17.0	13.2	11.8
Personal belongings	4	2.5	2.2	2.9
II. Indoor environment	22	22.9	19.3	18.2
Locomotion	3	3.0	2.7	2.9
Institutions	0	1.5	1.8	1.8
Meteorology	0	2.1	1.9	1.8
Topography	1	6.6	7.4	7.6
Plants	4	7.1	6.6	6.3
Animals	7	7.6	7.6	8.0
III. Outdoor environment	18	27.9	28.0	28.4
IV. People	11	6.8	7.0	7.6
Time	1	1.7	1.9	2.3
Quantity	0	1.8	2.5	2.1
Position	0	1.2	0.9	0.9
Ideal	0	3.9	6.7	8.3
V. Abstract, time, etc.	1	8.6	12.0	13.6

Although Boyd's child at 17 months and mine at 18 have practically the same number of nouns, 99 and 102 respectively, yet their proportions are different. Boyd's child has larger percentages from personal experiences, indoor environment and people than mine, while mine has more from outdoors.

Since Bohn and Boyd do not use any division for words from pictures and stories and also do not count animal sounds as words as I have done, I herewith give E's proportions at 18 months worked out under these conditions. This would leave 92 nouns. Her personal experiences were 43.5 per cent, indoor environment, 15.2, outdoor environment 31.5, people 7.6 and abstract terms 2.2. This does not materially alter my results; the main difference is that outdoor environment has a larger proportion than ever.

The 17 month vocabulary of Boyd's daughter corresponds well in the distribution of nouns with Bateman's children at 28 months; personal experiences and indoor environment are nearly the same as his second daughter, but Boyd's child had more words from outdoor environment and people than Bateman's children did. Her three, four and five year vocabularies show a much more uniform distribution of her nouns than E's vocabularies do. Yet there is the same decrease in personal experiences and indoor environment, and increase in outdoor environment, people and abstract terms with both children. Boyd's child seems to have had no special change of environment to stimulate decided differences. Her personal experiences have a smaller proportion than E's at three and four, but larger than at five; indoor environment is larger at every year, and so are words for people and abstract words. Her percentage from outdoor environment is smaller than E's at every age and especially so at five. The chief difference is in the percentages of animal terms, Boyd's child's ranging from 7.6 to 8 and E's from 13.5 to 15.5.

Brandenburg (16) has published the percentages of his daughter's nouns at three and four years following my method. She shows a decided drop in personal experiences from 39.7 to 33.5 per cent, a slight increase in indoor environment from 15.9 to 17.3, and a slight increase in the other divisions; outdoor environment being 17.5 at three and 19.4 at four, people (proper nouns are included) 10.5 and 12.4; stories 0.7 and 0.8, and abstract terms 14.7 and 15.9. She had a change in environment between three and four. Her proportions of words for animals and plants are small in comparison to E., the former being 6.7 per cent both years, and the latter 1.8 and 2.8 per cent.

Boyd's, Brandenburg's and Bohn's children used more abstract terms than did my child.

Drevers ('15, III) divides the nouns of his three children at 28 months, 43 months and 54 months into "Home Environment," "Outside Environment," and "General and Abstract." It is difficult to make his classes correspond sufficiently well with those divisions used by the other writers so as to be able to use his vocabularies for comparative purposes. However these children show from the younger to the older, a decrease in the percentages of personal experiences and indoor environment, and increase in outdoor environment, in people and abstract terms.

To sum up, these ten children show considerable variation in the distribution of their nouns. Yet it seems as if the typical results and those we would naturally expect are a progressive decrease in the proportion of words relating to personal experiences and indoor environment and a progressive increase in those having to do with outdoor environment and abstract terms. My daughter exhibits this change of interests yet her proportions are probably not typical for she shows a smaller percentage of words from indoor environment and a larger percentage from outdoor environment than do the others. This is doubtless due to the fact that she is not in the least domestic, but is a devoted lover of nature.

Nature Vocabulary. In the following table there are given for all the ages in both numbers and percentages of all the nouns: 1st, the animals and related terms such as "wing," "antennae," "shell," "cud," etc., learned from real life; 2nd, actual animal names both from real life and pictures and stories; 3rd, all animal names and related terms, and finally

TABLE IX

VOCABULARY FROM NATURE

Age in years		1½	3	4	5	6
I. Animals and related terms learned from real life	Number...	15	86	150	210	287
	Per cent...	14.9	13.5	15.5	15.5	16.5
II. Actual animal names from real life and pictures and stories	Number...	18	75	141	188	252
	Per cent...	17.6	12.0	14.5	13.6	14.4
III. Animal names from real life and pictures and stories; also related terms	Number...	28	95	173	245	338
	Per cent...	27.4	15.2	17.7	17.8	19.3
IV. Vocabulary from nature: sky and landscape, plants and animals	Number...	34	148	298	412	561
	Per cent...	33.3	23.7	30.6	30.0	32.0

the whole vocabulary from nature—sky and landscape, flowers and animals.

All these figures are high in comparison to other children. The three animal vocabularies are very high at 18 months, drop somewhat at three, and then steadily increase in the following years. The number of words for animals and closely related terms were 95 at three, 173 at four, 245 at five and 338 at six.

This child learned nearly one-third of her nouns from nature, from sky and landscape, flowers and animals. The three year contribution is the lowest, slightly less than one-fourth. This is due to the comparatively few flowers she knew at three. Taking the vocabularies in the summers, of course gets the nature vocabulary at its largest.

At 18 months, one-half of her animal names came from books and pictures; at three years, one-tenth; at four years, one-seventh; at five, one-sixth; and at six, one-fifth. She has not many animal names from pictures and stories; there are 9, 8, 22, 34, and 50 respectively at the five ages. The emphasis has been rather on learning the life about her. She knew 36 names of insects when six years old, and 33 fish, amphibia and reptiles—all from real life. These last two kinds of animals have been rather a specialty of hers, as may be seen by noting the number of particular names in the five and six year vocabularies, as "leopard frog," "pickerel frog," "milk snake," "painted turtle," etc. At six years the related terms of the mammals show several quite general in nature and different from the "tail" of 18 months and "pet" of three years, as "male," "female," "pest," "prey."

The flower vocabulary is large and varied; she knew 80 plant terms at four, 103 at five and 142 at six.

Verbs. The child's development is plainly to be seen by a study of the verbs learned at the different ages. In each year there is an advance from the simple, fundamental words to those more complex and unusual. The intellectual stage of the three year old and the words that satisfy her are very different from that of the five and six year old with the fine distinctions she uses and the variety of actions she describes. That the earlier vocabularies contain the fundamental words is evident from an examination of the percentages of verbs learned each year that are not repeated in later years: 2 per cent of the three year verbs, 16 per cent of the new verbs at four and 38 per cent of the verbs learned at five.

Adjectives. The tables of different classes of adjectives, both numbers and percentages follow.

TABLE X

NUMBER OF ADJECTIVES

Age in years	1½	3	4	5	6
Article	0	1	1	2	2
Demonstrative	0	12	13	15	15
Interrogative	0	2	2	2	2
Quantitative	0	13	23	28	28
Qualitative	10	111	193	301	368
Color	0	15	22	29	34
Spatial	0	13	21	37	41
Sense	1	15	26	38	40
General	9	68	124	197	253
Total	10	139	232	348	415

TABLE XI

PERCENTAGES IN ADJECTIVES

Age in years	1½	3	4	5	
Article	0	0.7	0.4	0.6	0.5
Demonstrative	0	8.7	5.6	4.2	3.6
Interrogative	0	1.4	0.8	0.6	0.5
Quantitative	0	9.4	9.9	8.1	6.6
Qualitative	100	79.8	83.3	86.5	88.8
Color	0	10.7	9.5	8.3	8.2
Spatial	0	9.4	9.1	10.6	9.8
Sense	10	10.7	11.2	10.9	9.5
General	90	49.0	53.5	56.7	61.3
Total	100	100	100	100	100

From three years on there is an increase in the proportion of qualitative adjectives, from 79.8 per cent at three to 88.8 per cent at four. Of the qualitative adjectives, color and sense decrease slightly, spatial adjectives fluctuate between 9.1 and 10.6 per cent, while the general adjectives increase from 49 per cent at three to 61.3 at four. An examination of the adjectives themselves shows that they begin with the simple and fundamental words and progress to the complex and unusual, evidencing the child's development in discrimination and power of expression. Of the three year adjectives in the general qualitative division, 7 per cent are not used in the following years; of the new adjectives at four years 21 per cent are dropped out and of the adjectives learned at five years 34.5 per cent.

At five, E. added more adjectives expressing size, shape and position than at any other year. At six she added only a few of these words and only two new sense adjectives.

At three, E. knew 11 color names and four related words;

at four, 16 color names and six related; at five 20 color names and nine related terms and at six, 22 color names and 11 related words. All the three year color words are repeated in all the following vocabularies; and all but one—"violet"—of the four year vocabulary. There were no new colors added at five years; the five color names all end in "ish." Three of these were not repeated at six. At six there were two new words ending in "ish" and three entirely new colors all of which are rather unusual—"bay," "burnt sienna" and "olive green."

Adverbs. The tables of the different divisions of adverbs, both numbers and percentages, follow.

TABLE XII

NUMBERS OF ADVERBS

Age in years	1½	3	4	5	6
Time	0	11	18	24	25
Place	3	23	35	49	51
Manner	0	12	22	52	53
Degree	1	11	20	25	28
Modal	2	5	7	8	9
Total	6	62	102	158	166

TABLE XIII

PERCENTAGES OF ADVERBS

Age in years	1½	3	4	5	6
Time	0	17.7	17.7	15.2	15.0
Place	50	37.1	34.4	31.0	30.7
Manner	0	19.4	21.3	33.0	32.0
Degree	33	17.7	19.7	15.8	16.9
Modal	17	8.1	6.9	5.0	5.4
Total	100	100	100	100	100

Adverbs of place are the second to appear in the vocabulary, the modal being the first; they are the largest division until the fifth year when adverbs of manner are a little larger. Time, place and modal adverbs gradually decrease throughout the vocabularies, while adverbs of degree are 17.7 per cent at three, 19.7 at four, 15.8 at five and 16.9 at six. Adverbs of manner increase from 19.4 at three, to 21.3 at four and then make a sudden rise at five to 33 per cent, dropping slightly at six to 32 per cent. Adverbs of manner increase 83 per cent from three to four, *232 per cent* at five, but only 2 per cent at six. The increase of all the adverbs is 64.5 per cent at four, 55 at five and 5 per cent at six.

The Vocabulary at Five Years. Although in general the four, five and six year vocabularies are rather similar in character and general proportions of parts of speech and divisions among the nouns, adjectives and adverbs, still in many ways the vocabulary at five years seems unique. There was an increase in pronouns, prepositions and conjunctions that was not shown at four or six. Adjectives and adverbs increased tremendously—50 and 55 per cent respectively, while at six they increased only 19.2 and 5 per cent. Adverbs of manner increased 232 per cent at five and 2 per cent at six. There are nine epithets applied to animals,—a new development that year—four of which were dropped by six and no more were added. At five she used 27 new words denoting sounds and actions,—only two having been in the previous vocabularies—but at six she dropped 15 of these words and only added eleven.

It is difficult to find an explanation for these tendencies. For the two months before I began to collect her five year vocabulary, she had been exceedingly imaginative spending most of her mental energies on the marvelous doings of two animals she had invented. The other imaginative periods have occurred in the winter and were over and done with four or five months before her vocabularies were collected. When she came to Massachusetts, the new interests, the many people and the fascinating country made her quickly forget the imaginary animals. Is it possible that the great development of the imagination just before five and then its sudden diversion can be correlated with the above mentioned tendencies in language; the interest in adjectives and adverbs, in epithets and in words denoting sounds and actions, in short—in descriptive terms? It might be that although her thoughts were no longer imaginative yet her speech was still so to some extent.

The Understood Vocabulary. Feeling that no matter how faithfully I listened to my child's conversation, that I was not doing her justice in the matter of her six year old vocabulary, I tried to get some indication of the number of words she understood by using the dictionary. I asked her whether she knew what the words meant on 40 pages taken at random of Webster's Secondary School Dictionary, American Book Co. This was five per cent of the total number of pages. I wished to get more data, but she disliked so much being made a psychological subject, that it was only through much persuasion that I was enabled to examine her on 40 pages. I did not count any words that would have been excluded from the record of her spoken vocabulary, irregular parts of verbs, proper nouns, etc. She knew from two to 19 words

on a page, the average being 6.2. Since there were 790 pages in the dictionary, this would give 4,894 words as her vocabulary, both spoken and understood.

Of these 6.2 known words a page, 4.1 words were in her spoken vocabulary, while 2.1 were understood only. Multiplying 4.1 by the number of pages in the dictionary gives 3,239 words as her spoken vocabulary. The actual number I heard and recorded was 3,075 which is 164 less than the spoken vocabulary estimated from the dictionary. By the Binet test E's understood vocabulary at 6 years 9 months was 5,940 words—the 10 year level.

Comparison of the Size of Vocabularies. In the following tables of vocabularies of three, four, five and six year old children the size of the vocabulary as published is first given and then the vocabulary when counted according to Pelsma's, and Bateman's rules—i. e., no proper nouns and no variations of nouns, verbs or adjectives unless from different roots.

TABLE XIV

VOCABULARIES OF THREE-YEAR-OLD CHILDREN

Author	Sex	Vocabulary as published	Vocabulary reduced to lowest terms
Beyer, '16	Boy	2,055	1,807
Bush, '14	Girl	1,944	1,776
Brandenburg, '15	"	2,282	1,695
Boyd, '14	"	1,657	1,657
Heilig, '13	"	2,153	1,623
Whipple, '09	Boy	1,771	1,571
Gale, '02	Girl	1,176	1,176
Nice	"	1,139	1,139
Nice*	"	856	856
Bateman, '15	"	738	738
Pelsma, '10	"	681	681
Average of 11 vocabularies			1,338

*These vocabularies of my second daughter will be published shortly in detail.

The three year old vocabularies range from 681 to 1,807 words; the average of the eleven is 1,338. There seem to be six large vocabularies, two medium and three comparatively small. E. has one of the medium vocabularies, hers being 200 below the average. There are doubtless too many large vocabularies of children published to give us a fair idea of the average. What we need now are some small vocabularies.

There seem to be seven vocabularies of four year old children.

TABLE XV

VOCABULARIES OF FOUR-YEAR-OLD CHILDREN

Author	Sex	Vocabulary as published	Vocabulary reduced to lowest terms
Brandenburg, '16	Girl	3,061	2,777
Boyd, '14	"	2,598	2,598
Rowe, '13	Boy	2,346	2,064
Nice	Girl	1,765	1,765
Nice*	"	1,506	1,506
Pelsma, '10	"	1,278	1,278
Mateer, '08	Boy	1,020	922
Average of 7 vocabularies			1,843

At four the vocabularies range from 922 to 2,777; the average of the seven being 1,843. E. had almost as many words—1,765.

Only one five year vocabulary seems to have been published.

TABLE XVI

VOCABULARIES OF FIVE-YEAR-OLD CHILDREN

Author	Sex	Vocabulary as published	Vocabulary reduced to lowest terms
Langenbeck, '15	Girl	6,837	5,948
Nice	"	2,502	2,502
Average of 2 vocabularies			4,225

Elizabeth Langenbeck appears to have the largest child vocabulary that has ever been published. As one reads it over, it seems as if it would do credit to an adult; indeed probably few people use the number of color, form, tactual and sound terms that she does. The vocabulary was collected for six months and thus is larger than if it had been taken just before or after her birthday.

One six year vocabulary has been published.

TABLE XVII

VOCABULARIES OF SIX-YEAR-OLD CHILDREN

Author	Sex	Vocabulary as published	Vocabulary reduced to lowest terms
Rowe, '13	Boy	3,480	3,132
Nice	Girl	3,075	3,075
Average of 2 vocabularies			3,103

These two are nearly equal, their average being 3,103.

Sentences at Different Ages. E's first sentence was at the end of the 18th month: "Kiss fwog," (imperative). The next was at the beginning of the 19th month: "Betty kiss baby." From then till after two years her sentences increased in length and complexity, but they lacked connectives, such as conjunctions, prepositions, articles and the verb "to be."

21 months. Fish swim water. Flowers swim water too.
Home, Papa (in reference to a toad she found).
Baby catch crows. Baby feed hens corn.
Mamma wap door; Baby say, "Come in."

22 months. My toe peek out. My toe happy.
I see goat. Baby pick dannyions, give goat.
You get more, p'e (please), Papa dear.
No sanny (thank you) nauny keekaws (naughty mosquitoes) bite me any more.

2 years. The article "a" and forms of the verb "to be" began to appear.
P'e give me a needle, I sew a fine seam.
Is dat a mudder b'ue jay callin' her baby?
I runnin' 'ike a butterfly.
My bunny not dead. Bad flies are dead.
What dat hawk doin' wid dat baby? Dat baby don't like dat.

A Whole Day's Conversation. At various times from 33 months to 63 months I have taken down series of sentences ranging from 80 to an attempt at a whole day's conversation. The average number of words in these sentences varied from six to seven.

When E. was 63 months old, we tried to record a whole day's conversation but found it impossible to write fast enough to get down everything she said, so that one-sixth of the sentences had to be merely indicated. This was in the fall in Oklahoma when E. talked a great deal more than she did in Massachusetts. The total number of sentences said during the day was 1,702. The average number of words in the 1,394 recorded sentences was 6.17; therefore the total number of words used was approximately 10,500.

D. our second daughter, at 35 months used in one day 2,018 sentences or 7,600 words; the average number of words in a sentence being 3.77. E. at this same age had an average of 7.18 words to a sentence in a series of 100 consecutive sentences.

Brandenburg's ('15) daughter at three years used in one day 1,873 sentences or 11,628 words. The average number of words in a sentence was 6.6. This is much the same as E's record at 63 months.

Bell's ('03) daughter of three and a half used 15,230 words in one day, while his daughter of four years and eight months used 14,996.

Gale ('00) gives a number of records of whole day conversations of younger children. His boy at two years used 5,194 words in one day and 9,290 at two and a half. His youngest daughter used 8,214 words at 28 months and 8,996 at 31 months. Another boy used 10,507 words the day he was two years old, the same number that E. used at five years and three months.

Definitions. As already mentioned E. resents "foolish questions," the answers to which the inquirer already knows as well as she does. Therefore it was almost impossible to test her mental development by the convenient method of asking definitions. However one day when she was just three, she happened to be in a communicative mood and gave the following answers to the questions "What is a—?"

Father: Like a man who makes oxes work. Oxen work when they kill people.
Circus: Dey are c'owns in a circus.
Hat: Dat's my Papa's hat. He puts it on.
Bed: Dey make it up.
Automobile: We use it for to have; dat's just for to wun it, for Uncle Will to wun it.
House: Dat's for people to live in.
Window: Dat's for to have people look out.
Shoes: Dey are for to put on my 'dockin's.
Water: A 'pwing (spring) gets 'pwinged out of water. We get a dwink of water and then a wain comes down and we put a g'ass and we have such nice water on a nice sunny day.
Mother: Mudders have papers and faders have all nice sings for babies to p'ay wiz.
Meat: Dat's for people to eat. Ammal cwackers are for people when they get sick. I don't want to get dead. Wichard says, "I dead you." I don't want to get fighted.
Cousin: Oh, dat's like Hawwis.
Bee: It's a 'tingin' bee what tings people.
Feet: I use them to walk.

When E. was six years and four months old I was asking her four year old sister to give definitions of these same words and others. E. seemed interested and occasionally was minded to express her opinion. I give here the remarks she volunteered.

Window: D. said, "To look in," but E. said, "I'd say a window was to keep the rain out and to look out too."
Shoes: D.—"To keep feet—to keep stockings warm." E.—"No, to keep them from getting cold."
Water: D.—"Is to drink." E.—"No, I don't call it to drink; it wasn't made to drink. I don't see how they made water. I don't see how things could make it."
Meat: D.—"To eat up." E.—"It's made to eat up.'
Bathe: D.—"Means like to go swimmin'." E.—"I say go wading and swimming. You know frogs bathe a great deal of the time and fishes bathe all the time. Just sit in the water all the time. I think

that would be a rather tiresome way. If you'd get out of the water, you'd die."

Cousin: D.—"Made to play." E.—"I don't know what people are made for. I suppose to make the world better. And sometimes they make it worse. Spend some of their energy making it worse and some of their energy making it better. Think of their fighting! If there weren't any people, think how many passenger pigeons there would be. People who aren't any use! Isn't it a great sorrow!"

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EDUCATIONAL CONTROL OF NATIONAL SERVICE*

By William L. Dealey, Providence, R. I.

We confront a world crisis. Immense and unprecedented national organization, the cumulative sweep of Russia's revolution, have cashiered countless social institutions. Isolated as yet from war, public schools still express such dead institutions. Unless educators "act quickly and wisely in connection with war-created forces, they will have passed the supreme opportunity of social service."

Universal Physical Training

Non-military measures of impressive educational value happily afford the most essential basis for military training. School control of "street and idle" time leaves a future citizen soldier physically fit, skillful, and familiar with teamplay. (1) Playing fields develop healthful activity in maximum air and sunlight. (2) Play activities liberate innate reflexes and thus habituate to certain reactions. Natural activity is adapted for orderly child growth; but more complicated series such as gymnastic plays, dancing, games and athletics, are taught. This advancing series ends with highly organized competitive games developing economy, accuracy and speed in essential neuro-muscular abilities, particularly emergency movements as running, jumping, throwing. These movements specialize and adjust to shifting exigencies in contests. Such habit formation is serious education, increasing skill. (3) Play utilizes the psychology of spontaneous gangs[1]—natural leadership and social pressure—to create social attitudes. The future soldier learns group action through such processes as playground self-government, summer camps, boy scouts, organized teams, school associations. A suggestive range of organized team games is illustrated in Cleveland high schools, with 66 baseball teams, 205 basketball, 55 football, 20 soccer, 47 track

* This study draws freely from related literature. The extensive parallel advances in training and service of girls merit separate treatment.

[1] Sheldon lists 1,196 spontaneous organizations among 2,508 children (8-17); Puffer, 128 of 146 Lyman School boys (11-16) members of gangs; Scott, 69% of 490 boys (11-16). Sheldon finds 61% of 851 gang members in athletics, 17% migrating, building, hunting, fighting and preying (activities allied to war).

and field, 12 indoor athletic, 9 indoor baseball, 3 swimming and 19 tennis teams (1915). The satisfaction in social and combative impulses increases with public applause. The educational value of these important pre-military activities is clear.

With universal physical training all schools must organize educational play. There are in 414 cities, 3,270 supervised playgrounds as cadres from which to develop adequate playgrounds. State-wide machinery would arrive automatically were schools equipped as neighborhood recreation centers.[2] By 1915, 133 cities had opened 612 school houses as evening recreation centers, in contrast with 56 cities having special recreation buildings.[3] School gymnasia influence probably less than 5 per cent. Pools represent maximum use of small area, and 306 are reported by 139 cities.[4] Flooded spaces (in northern states) offer winter skating rinks.[5] Detached playgrounds may surround a school plant at adequate distances, supplemented in turn by playing-field and park system. Among 496 smaller cities, 36 per cent report school grounds larger than 2 acres, reaching even 20 acres at Gary or Joliet. Dresslar (1914) finds 42 per cent of 1,245 rural schools with at least one acre.[6] To freely express (for 1,000 high-school pupils) the traditional games, Curtis estimates a playing field of 8 acres (minimum, 5 acres).

Maximum use of these facilities to minimize equipment and avoid congestion, requires nearly uniform attendance at all hours. A lengthened school day and electric lighting allow the plant to operate twelve hours.[7] Some flexible systems house duplicate organizations in one set of school accommodations: relays in academic or other work, with parallel relays at play.[8] Curtis estimates this device would warrant at least 50,000 specialized play teachers. Supervised playgrounds employ 7,500 summer workers but are reduced to 14 per cent of this force for the year-round.[9]

The municipality administers playgrounds in about 58

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[2] Cf. National Community Center Conference and National Federation of Settlements.

[3] Thus Cleveland operates 16 school centers; Chicago playgrounds, 20 field houses.

[4] 188 cities report swimming activities (1915). Swimming is a superior exercise for fundamental muscle groups.

[5] 88 cities report skating activities (1915).

[6] North Dakota therefore authorizes 2-5 acres.

[7] 129 cities report 524 playgrounds lighted evenings.

[8] As the Gary "balanced load," Cleveland "platoon" or Dallas "overlapping" plans.

[9] To supplement schools of physical education, some 70 cities train their workers; 35 require civil service classification (1915).

per cent of the cities. A centralized and powerful recreation commission controls Detroit's play centers (whether school or park property). Oshkosh (Wis.) has correlated its recreation department with the school board. The extensive social centers of Milwaukee are under exclusive school rule. At least 70 school boards exercise similar supervision.[10] Playground associations are active in some 114 cities. A limited field force represents the Playground and Recreation Association of America.[11]

Without compulsory physical training, school athletics will continue to reach a mere fraction from among the best-developed. Physical requirements for citizen soldiery will clearly reveal the educational absurdity of a fractional system[12] and sharply criticise physical defects. Athletics involve the examination and classification of each boy, implying an immense extension of school medical inspection. Training requires special supervision to avoid unbalanced specialization, overindulgence, or unsocial play. The public athletic leagues in 177 cities illustrate this control. The Public Schools Athletic League of New York as a model, promotes standard athletic badge tests. Crampton (1915) mentioned 163 school playgrounds open for after-school athletics, 40,000 boys practising daily. Similarly, compulsory athletics of Boston high schools include running, jumping, throwing, chinning and swimming tests for each year. Such educational athletics are extensive, schools or classes competing as units for superior averages.

The problem is badly complicated by the rural factor, embracing 59 per cent of all school children. Rural schools, local granges or even churches, will afford facilities. A special school director can organize the county's athletics (as in

[10] 67 cities by recreation departments or commissions, or 31 by park boards: associated school boards, 17. The ratio of cities using municipal or private funds or both is 182 to 112 to 130 (1915).

[11] Cf. American Physical Education Association.

[12] In Cleveland high schools, 74% of the boys do not play organized ball; 36% basketball, nor 55% football. Among elementary boys (over 10), 78% do not play football, nor 80% basketball, nor 17% baseball. Listing elementary boys (over 8), perhaps 1 in 4 goes camping; 9 in 20 hike; rare riding experiences involve motor cycle for 1, horse 4, and cycle 7 in 22; for each boy shooting, 2 do not (in high schools, 2 to 9); hardly 55% swim (65%, high schools); three-fifths skate; three-fifths wrestle; only half box (1915-Survey).

The New York City committee on recreation finds 734,402 children (under 15) who must seek recreation outside their homes, and school or park playgrounds with an average daily attendance from 25% in summer to less than 14% in winter.

The total daily playground attendance in 389 cities was 814,108 (July and August); in 90 cities, 200,478 (winter).

Hamilton, Tenn.).[13] County athletics properly culminate in county school fairs (Virginia) or rural play-festivals (as at Amenia, N. Y.). Fresno County (Cal.) entered 1,800 boys from 40 schools in athletic tests, for average scores. The Public Athletic League of Baltimore through state appropriation, is extending track and field events to the counties and will standardize state-wide athletics. County administration (with state supervision) and consolidation of schools, are essential.[14]

Fortunately, New York is experimenting with compulsory state-wide physical education, as a model for state legislation. Control involves the state board of regents, a state physical training director with staff, and appointment of some 600 physical training instructors. The state requires a weekly minimum (100 minutes) of school children; and contributes half the salary ($600) for special instructors. High-school teachers provide two-minute setting-up drills with daily class inspection; the special instructors, four hours in organized play,[15] plus 60 minutes gymnastic drills or marching.[16] State-wide physical education includes medical inspection, individual health habits and recreational activities. Clearly less-adapted and wavering state programs should be integrated into a standard system, enforced directly by legislation.[17]

Boy Scouts and Military Cadets

Among all organized non-military activities for boys, within or without the school, but one has proved itself pre-eminently adapted to national emergency—the Boy Scouts of America. This organization should therefore at once be promoted to an integral and prominent part of junior (and senior) high-school activities. It is only necessary to recall the aid of scouts to Ohio flood sufferers (1913), in fighting forest fire (Montana)

[13] County agents and 89 Y. M. C. A. rural secretaries tend to associate boys' work with athletics (1915).

[14] Cf. the state recreation commission (California). State control by recreation laws (28 states) as yet chiefly ensures urban home rule.

[15] 3 hours may be satisfied by home or community recreation equivalents.

[16] Cf. physical training in the Swiss schools under federal supervision: all boys at 8 years, 2 hours weekly; at 15 years, 1 hour daily (frequent military exercises without arms). Cf. in Australia, compulsory junior cadets (12-13) receiving daily physical training (15 minutes); marching; miniature rifle shooting, swimming, running games or first aid (120 hours per year).

[17] Cf. the recent Illinois physical education law requiring a minimum of one hour weekly in all grades. Cf. Maryland, Massachusetts, New Jersey (1916) commissions on physical training with reference to military efficiency. The latter commissions recommend compulsory physical training in all schools.

or at the Salem fire (1914), in campaigns against unemployment (Cleveland) or for state forest conservation (New York); or their year-record of 6,020 distinctive services to the community and 2,558 acts of practical aid (such as 228 rescues from drowning). The scout motto is Be Prepared. In the first five months of war, over 5,000 war service badges were awarded English scouts serving three hours daily 28 days without reward. Over 50,000 scouts served in government offices, police stations, hospitals and relief associations. No other non-military activity so includes the essential principles of the citizen soldier.

Membership is open to *all* boys but reaches about 200,000. Under the national council are 350 chartered councils, each with an active scout commissioner.[18] Leadership is voluntary, but of 7,067 scout masters, 65 per cent are college men (1916). The gang is systematized as a uniformed patrol, 8 boys including a leader and assistant; a troop consists of 2-4 scout patrols.[19] Local churches, settlements, schools, playgrounds provide for weekly assembly. Troop meetings are partly social, partly educational, and follow orderly procedures.

A boy advances from tenderfoot through second-class to first-class scout. Essential tests include (tenderfoot) scout law, knot-tying; (second order) various outdoor arts as tracking, compass reading, use of knife, fire building; (first order) a seven-mile trip alone, map reading, distance judging, signaling, advanced camp cooking, advanced first aid, training a young boy as tenderfoot. Local councils have summer camps.[20] These activities incidental to hiking, exploration and camping, are equally essential to citizen infantry.

The first-class scout is then eligible to merit badges in 58 different activities. Thus the merit badge for public health includes 9 tests (such as planning the sanitary care of a camp). Among 14,254 merit badges awarded (1916), were 1,191 for swimming; 1,059, personal health; 985, public health; 882, first aid; 493, pathfinding; 459, life-saving; 451, cooking; 404, pioneering; 397, camping; 299, athletics; 232, signaling; 111, automobiling; 101, marksmanship; 39, horsemanship; 36, surveying; or 17, aviation. Such activities bringing practical health and skill, afford the fittest pre-military experiences.

Scout values are educationally desirable from many points

[18] Cf. the independent Rhode Island scout organization.

[19] Cf. the infantry squad, platoon or company.

[20] About 100 camps (1915). Several councils have small cruising boats. The division of 5-8 boys includes boatswain's mate and coxswain; three divisions, a ship's company. The scout rises from apprentice through ordinary to able seaman, by swimming, rowing, knot tying, boxing the compass, chart reading, steering, look-out duty and like tests.

of view. For vocational guidance, merit badge tests invite pre-vocational experiences. Useful elective tasks include 704 badges awarded craftsmanship, 605 carpentry, 262 electricity, or 205 machinery. Continuation schools may utilize merit badges to motivate efficiency of working boys.

Adolescent ideals—sublimated in public service and daily good turns—act "adroitly, by a thousand specific habits, to anchor a boy to modes of right living." Scouts give concrete expression (as Russell suggests) to a remarkable code of honor, couched in positive terms from the round of every boy's life.[20]

Scoutcraft is adapted to all degrees of ability. Scout advance implies the progressive organization of higher habits through interesting, self-imposed tasks. Motivation is maximum, reward following success. Electives as Snedden suggests, are short, concrete units ("self-carrying" activities), so that learning processes are endlessly cumulative. To Dean Russell, the scout movement is "the most significant educational contribution of our time."[21]

Its activities are more valuable to the nation than much in the present curriculum. Yet scout troops are left to unsalaried teachers lacking time or training.[22] Even in rural sections (so favorable to hiking and camping), it is well-nigh impossible to organize (as Curtis points out) through lack of leadership. "The order can never come into its own until it becomes part of the public school work and is required of all boys."

As initial steps toward integration, 790 public school teachers are scout masters and school superintendents are on executive boards of nearly all chartered councils. In 1915, teachers certified the school records of 381 boys as satisfactory for scholarship badges. At Waco (Tex.) the superintendent requested scouts to attend school in uniform. Paris (Ill.) has placed a troop in every school, with credit for scout achievement. The University of Texas awards scholarships to eagle scouts.

From over 6 million boys (12-17) may be withdrawn those now 17, delinquents, workers supporting dependents or in isolated rural sections. Under the national system of service, membership of all other boys in school scout troops should be compulsory, by state or federal law if necessary. Pur-

[20] Cf. similar achievements of the Junior Police (as in the Bridgham School, Providence).

[21] Russell, J. E. Scouting Education. Teachers College Record. January, 1917. pp. 1-13.

[22] Scout training courses have appeared at 7 universities (Boston, California, Columbia, Pittsburgh, Texas, Virginia, Wisconsin).

chase of uniforms warrants state or federal aid.[23] Scout troops should then be inspected as to efficiency either by the federal War Department or Bureau of Education.[24]

The present inevitable mobilization of high-school cadets should develop a more comprehensive system of physical and civic education. Quickened by the war, 14,481 boys (53 per cent) drilled in 119 public high schools (1915). Cadets frequently waste their motivation in questionable repetitions of the manual of arms and useless close-order parades. As Ayres suggests, these drills are expensive (uniform and rifle) and without vocational value. A consensus of educational and military opinion sees little value in such tactics for early adolescence.

High-school battalions of Boston, Washington, Salt Lake City, Omaha or Fort Worth, enjoy a definite place in their educational systems. Crack cadet corps, adequately equipped and officered, may embody effective national service. Their uniforms stand for playing the game. Cadet training is consummated in the 27 special military preparatory schools.[25] At Culver Academy under an effective military staff, cadet officers are selected for efficient leadership. Cadets practise in the field, with skirmish runs, week-end hikes, rides and camping trips. An athletic emblem rewards set-up and physical fitness.[26] Cadets with mechanical interests profit from drills with a modern battery (range finders, telephonic system, intricate guns and carriages); drill with a field wireless detachment; or an instructive company of engineers, building spar and pontoon bridges. The New York State bureau of technical military training ($150,000) is authorized to enforce three hours military training for all boys (16-18 years).[27]

[23] Cf. Wyoming's aid to cadets. Uniforms at cost from the federal quartermaster's department would prove useful.

[24] Young, E. The Boy Scout Movement. Quarterly Review. Vol. 225, 1916. pp. 400-15.

[25] Gignilliat, L. R. Arms and the Boy. Bobbs-Merrill, Indianapolis, 1916. 371 pp.

[26] Cf. American Posture League (New York).

[27] Louisiana (1916) authorized military instruction in high schools (minimum, 1 hour weekly). California awarded the State High-School Cadets (25 companies), $13,000 state aid (1915).

Cf. recent bills including compulsory physical training in elementary with military training in high schools (Delaware, Michigan, Missouri), or universal physical training but local option on military training (New Jersey).

Cf. in Australia, compulsory senior cadets (14-17), with at least 64 hours a year in physical training, drills with or without cadet rifles, and range practise.

Cf. voluntary preparatory courses (military exercises, light tactical problems, extensive rifle shooting) for Swiss boys out of school (16-19).

Voluntary enrollment has itself assumed significant proportions in our public high schools.[28]

As a rule, military cadets are actually inferior in efficiency to boy scouts. Since the newer high-school companies commonly follow close order drills and manuals, thus failing to meet modern conditions, they should be restricted to senior high schools and attached to boy scout organizations. Attached cadet troops could specialize in educational scout activities such as rough map sketching, engineering, signaling, first aid and sanitation. The scout is not a soldier, but in his non-military activities he is practising the fundamentals of infantry work (caring for himself in the field, marching and shooting). Sea-scouting affords similar pre-naval experiences.

Use of army rifles should depend on physiological age, and be generally discouraged for immature boys. In view of the educational value to the Swiss of rifle shooting as their national sport, the merit badge for marksmanship should be required of scouts 16-18.[29] At this age Swiss boys begin record shooting, and some 13,000 are rifle-club members (1914). As a rifle club, the cadet troop may enjoy co-operation with the National Rifle Association of America. Clubs may draw rifles (on bond) from the War Department; which also issues old rifles and target ammunition to uniformed and instructed cadets (40).[30] The New York Public Schools Athletic League has 26 sub-target gun machines. Among 5,000 shooting, 606 qualified for marksmen's badges, 385 as sharpshooters (1916), and may use armory galleries. The League has organized a field day at the state rifle range, Peekskill. Salt Lake City schools possess two complete rifle galleries. Washington cadets enjoy outdoor shooting on the ranges for 6 weeks (March-April), followed by field firing competition between platoons, inter-high competition between marksmanship platoons, and closing with competitive field firing for the championship (1916). California cadets compete on state ranges,

[28] In New York City at least 2,500 students are drilling under national guard officers in 17 high-school organizations (March). The guard cooperates with free use of armories, even rifles, and work includes minor tactics, target practice, signalling, first aid and sanitation. Chicago has ordered rifles and "pup" tents for 3,000 cadets.

[29] Cf. the junior marksman's lapel button issued boys by the Rifle Association (Washington). Gignilliat suggests cadet shooting be effective "safety-first" instruction, boys receiving cartridges only on the range, in position to shoot, faced toward the target, and at the finish withdrawing the bolt.

[30] Australia supplies over 40,000 school boys with free arms, munition and instruction. New Zealand builds miniature rifle ranges in its schools and issues rifles, ammunition and instructors.

inspected by national guard officers. The National Association arranges school shoots.[31]

Programs may be greatly enriched by military athletics. This extension is the remarkable Wyoming plan of pre-military training.[32] Steever is adapting routine military training to a series of national defense games, involving strenuous competition within and between high schools. Honors include uniform-stars, medals, team trophies and school credit. Elective units are equalized (through the state office) by choosing the personnel in turn. There are no officers, only leaders of the competition units, such as wall-scaling, infantry-drill, troop leadership, field-firing, camp-and-field, or scholarship units. The school year is divided into short training periods to maintain interest and educational efficiency. The complete plan involves 14 days in summer camp at the close of school, and includes training in cooking, sanitation, simple field engineering, scouting and patrolling. Such games supplement the great traditional games.

The health values inherent in camping, hitherto limited to sons of the wealthy, warrant such camps as an integral part of an educational system. Curtis estimates less than 1 per cent of all boys are reached.[33] The Denver association through camping hikes in a chain of mountain parks, has taught boys to pitch tents and cook.[34] The Los Angeles camp on government mountain land includes supervised camp fires, forest hikes, organized athletics and swimming. Military experiences should be largely limited to summer training camps. Continuous outdoor work is basic. At large-scale training camps, all boys learn by caring for themselves and equipment, marching, deploying over difficult ground, shooting, sharing field maneuvers. Boys demonstrate by actual participation the elements of modern organization and team work. The emotional accompaniments foster patriotic attitudes. The Massachusetts commission recommends one month at camp before or after the 12th grade. Snedden suggests much physical and some military training for boys aged 16-18 in voluntary (later compulsory) camps.

Official demonstration of the newer pre-military training was given by U. S. Army officers at the Fort Terry training camp (1916). Modelled after the remarkable Plattsburg

[31] As the Astor Cup Match and National Trophy for both military school and public high-school teams.

[32] The High School Volunteers of the U. S. claim nearly 30,000 boys under the Wyoming plan (*Everybody's*).

[33] 62 cities report camping activities (1915).

[34] School hikes are easily organized; 164 cities report some tramping activities. Shelter tent outfits are inexpensive.

camps, though much less intensive, 1,200 boys for 5 weeks lived in army tents and deployed in the open air. At least 7 junior training camps (15-17 years) were planned by the War Department (1917).[35] The New York commission plans outdoor development in after-school hours with field training (2-4 weeks) under national guard auspices. Cadet troops may utilize county fair and state drill grounds. At Culver Academy, two summer camps have trained over 700 boys appointed from high schools of the Middle West. In the (1915) camp, 200 selected Indiana boys practised first aid and sanitation, tent pitching, trench making, signaling, skirmish runs, practice march and field problem.[36] The Wyoming plan is also illustrated at Cheyenne. High-school cadets hike to a summer mountain camp (10-14 days), adding to military maneuvers (including a sham night battle), fishing, hunting, mountain climbing. The National School Camp Association (New York) endeavors to maintain summer camps at minimum cost.[37] About 1,000 boys (average 13.5 years) received training at Ft. Hamilton from 2-12 weeks (1916). These military camps substitute definite training for idle street play.[38] Constructive school programs should reach all boys with summer training camps, military athletics and boy scout troops.

Continuation School Control

Translated in school terms, nation-wide mobilization means school control over *all* the nation's boys. Educational accounting must terminate its present surprising inefficiency. At the eighth grade, schoolmen actually lose contact with the majority of future reservists.

A state board of education (Connecticut) may enforce either child labor law or compulsory attendance. Control becomes effective when the employed child reports monthly (Michigan) and at discharge, his employer returns his specific work certificate to the issuing office.[39] The federal child labor law also stimulates universal education with national support. Upon this 14-year minimum the National Child Labor Committee can erect a more suitable employment limit, since skilled

[35] Cf. the Junior Naval Reserve Corps affording boys pre-naval experiences (equally useful for the merchant marine) at training camps, such as Camp Dewey (New London).

[36] The other 10 honor military schools afford a similar nucleus for assistant training-camp instructors.

[37] Expenses for 2 months, $24 (including uniform, dues, subsistence).

[38] Training may be other than military. Cf. summer farm camps (page 256).

[39] California, Connecticut, Maryland, Massachusetts, Pennsylvania.

trades have no room for immature boys (14-16). Physiological age best expresses this child labor formula.

Educational oversight alone insures that all juvenile employment contributes to the child's educative process. Boys in part-time systems (as Cincinnati or Fitchburg) remain under supervision while earning a wage. Part-time high schools place their pupils in commercial shops for alternate two-weeks, weeks or half-days, and retain close co-ordination.[40] Manufacturing corporations install similar apprentice schools. As distributing centers between school and industry, corporation schools offer advanced means of control.

Part-time and continuation systems allow control of all employed boys. At Boston, compulsory classes reach juvenile workers (under 16) four hours per week.[41] Pennsylvania supports state-wide compulsory continuation schools (14 to 16). Wisconsin requires working boys (16 years) to attend four hours weekly, for 8 months. These follow-up systems should extend school contacts to 18 years. They control under educational management retarded and eliminated children. Federal funds should stimulate continuation schools in a majority of states.[42]

Vocational schools should derive immediate advantage from the great industrial mobilization now in process.[43] National organization implies (1) inventories of establishments as a rough basis for control; (2) minimum annual educational orders to prepare industries for service; (3) enrollment of skilled labor in an "industrial reserve." Equipment and industrial production are more difficult processes than training an army. Since industrial schools enjoy federal aid, their enrollments should be recognized. Vocational training in useful (war) industries should count as industrial service. Trade agreements with munitions industries, should warrant support from the federal board of vocational education. The halting character of the Smith-Hughes Act is most clearly offset in the New York legislation.

This advanced (New York) law suggests fuller federal and state "participation in the formative processes of our national life." Under a state bureau, boys (16-18) may substitute useful vocational experiences for required military

[40] An all-year school might divide into quarters, evenly distributing one-fourth its boys in commercial shops.

[41] Cf. the extensive Chicago or Cincinnati systems.

[42] Smith-Hughes Act reaches 7 millions (1925), with equal state funds.

[43] The Council of National Defense employs an advisory council of seven leaders in transportation, labor, munitions, supplies, raw materials, medicine, research. Cf. its munitions board with 5 industrial, 15 military and naval specialists.

training.[44] Such a law should promote day part-time and continuation and evening trade schools; anticipate army exemptions for industrial service; and create a mechanism for sifting over vocational experiences.[45] By branding as useless many unskilled occupations outside industrial preparedness, the bureau has a tremendous offensive weapon against industries without educative value. A premium is actually placed on entrance into skilled vocations.[46] Dean cautions assembly at intervals lest the boys learn skilled trades for ends other than national service.

Agricultural mobilization for war food production presents a third division in educative service. Small-scale production (within urban areas) is furthered by the School Garden Association of America, or the school and home gardening division, Bureau of Education. According to Randall, 78 per cent among 1,572 city superintendents report some form of school-directed gardens, even special departments.[47] A possible standard portions 1 all-year garden teacher with 200 children. Their large leisure readily allows children to raise vegetables (for profits) on small home areas.

By co-operative agreement with state colleges, the federal States Relations Service extends agricultural education through 1,200 county agents (1916). The Smith-Lever Act to which all states have assented, brings generous federal subsidy. A county superintendent of education may act as the county agent. Thus in Cook County (Ill.), the superintendent has 5 "country-life directors" to supervise home projects as part of the regular school work. Similarly of 330 county agents, 68 per cent are co-operating with the schools. Rural high schools should reorganize with part-time agricultural home-project courses (simple vegetable or poultry to complex dairy and fruit projects). Some 337 high schools report home projects. Their expert instructors may connect up junior pro-

[44] "Vocational training or vocational experience as will, in the opinion of the commission, specifically prepare boys of the ages named for service useful to the state, in the maintenance of defense, in the promotion of public safety, in the conservation and development of the state's resources, or in the construction and maintenance of public improvements."

[45] Dean, A. D. Tools as Well as Guns. Survey. Vol. 38, 1917. pp. 35-6.

[46] "It is clear that industries dealing with metals, machinery and conveyances (for example, manufacturing implements and tools, sheet-iron work, forging, structural iron work, rolling-mill work, firearms, railway equipment, engines and boilers, electrical apparatus, boats and boat-building and agricultural machinery) are in the class which is directly useful in the maintenance of defense." (Dean.)

[47] 140 cities average separate appropriations over $900.
220 cities report voluntary funds.

ject work in surrounding ungraded schools. In 33 northern and western states (1915), 209,178 boys and girls shared in club projects, 61 per cent under guidance of teachers, 12 per cent in profit-sharing enterprises. Corn clubs of the South number 62,922 boys, averaging 51.4 bushels per acre. The Bureau of Animal Industry co-operates for pig, poultry or baby beef clubs.

School credit for farm work under educational control is not limited to club projects. In Chicago, 6,000 high-school boys (over 16) pledged to work at food-supply, are reported released (April) with full credit for the remainder of the school year. Among boy scouts available for troop gardens, every Rhode Island scout may enlist in war food production service, growing a staple food during his enlistment and receiving a certificate from the governor.[47] For effective supervision over transportation, feeding, housing, the National Child Labor Committee suggests scout camps in given farm districts or similar camps under playground, probation or school officers. The civil-military service plan would enlist (under pay) boys 14-16 for food production, with intensive camp farms under agricultural leadership and military discipline. In lieu of military training the New York Commission will accept farming. Mobilization of boys (15-18) as active farm workers for the summer is under the Department of Labor. The director (Hall) of this U. S. Boys' Working Reserve (Washington) was called from the Boys' Club Federation. The Reserve is organized in supervised squads with adequate equipment for camping on farms. Accepted standards of child labor legislation should be strictly maintained.[48]

National Service

Educational re-organization will properly culminate in national service.[49] Various boys are serving in munition industries or agriculture. All other youth should devote one year to national service in any line of work (other than clerical) promoted by the Government, such as forestry, agriculture, engineering projects or army. Into this era of national service (extension of compulsory education) the public schools should lead. Local economies (at Gary) in practical work for the

[47] Cf. the Farm Boy Cavaliers of America (Minnesota, Wisconsin, Louisiana).

[48] With special work permits by proper officials, including physical examination and issue only for farms known to be suitable. Cf. the unfortunate authorization by the Pennsylvania board of education for withdrawal from school of children 12-13 to work on farms. The place for such children is in supervised home gardens.

[49] At nineteen years: with sufficient option that the training may come at a desirable stage in the individual's development.

school plant as prevocational experiences, apply on a large-scale to national improvements. Continuation and part-time machinery, at little cost, would render some successful vocational learning essential to all boys. Finley would employ "organized national enterprise" in which the individual undergoes continuation training as service.[50] As a logical outgrowth of public schools, Bourne suggests children spend two years in constructive service, with athletics, wide travel, training in vocational rudiments.[51] He asks for a new type of teacher-engineer-community worker.[52] A year's service in national projects implies some form of National University for "systematic co-operation" between federal bureaus as mechanisms of part-time experiences.[53] The Bureau of Education should be "something more than a book-keeping and essay-writing department."[54]

National activities as educative experiences open immense vistas in learning by doing. Their richness in situations real with reference to social use, guarantees effective habits. Boys are readily "captured for the observation and execution of industrial and commercial processes. The industries growing out of the fundamental needs of food, clothing and shelter; the industries, occupations and apparatus involved in transportation and communication—all furnish practically unlimited openings for constructive experiences. . . ." These experiences not only offer "a clearer understanding of the social and industrial foundations of life, but also opportunities for expression and achievement in terms natural to adolescence."[55] James suggests a constructive army of youth for

[50] Finley, J. H. Education and Preparation for War. Proceedings, National Education Association, 1915. pp. 344-50.

[51] Bourne would have constructive service organized and administered by state educational administrations but supervised and subsidized by the national government. This dual control might repeat the weakness of the federalized militia (state appointment of officers and authority for training). At the Mexican crisis, but 59% the war strength appeared, 63% of even this force untrained men. Universal military training implies exclusive federal control.

[52] Bourne, R. A Moral Equivalent for Universal Military Service. New Republic. Vol. 7, 1916. pp. 217-9.

[53] The University as a general staff or planning department should apply approved educational devices (from scientific industrial management) to large-scale national projects. Cf. the Advisory Committee of the Council for National Defense, as a general mobilization staff. Cf. staff of the army engineer corps. Cf. a unified federal office of public works with civilian corps of engineers.

[54] Dewey, J. Universal Service as Education. New Republic. Vol. 6, 1916. pp. 309-10, 334-5.

[55] Flexner, A. A Modern School. Occasional Papers No. 3. General Education Board (New York). 1916. 23 pp.

Cf. constructive service as the culmination of the new experimental school subsidized by the General Education Board.

industrial control of nature.[56] The boy (so conditioned) organizes his own essential knowledge.

Our great department of agriculture alone includes the office of public roads and rural engineering; our national forest service; bureau of biological survey enforcing game laws; bureau of animal industry studying or inspecting animals and meat food products; parallel bureau of plant industry; office of farm management improving practice; states relations service extending agricultural education by county agents and experiment stations; bureau of crop estimates collecting reports; weather bureau; or magnificent laboratories (bureau of chemistry) analyzing agricultural products, foods, drugs. War food production includes mobilization of skilled agricultural labor. Civil-military service could involve enlistment for model farm camps and assignments to farms now organized. Lane advocates a war-maintenance corps of labor for irrigated lands, with farmers organized about its mobile machinery.

The department of commerce' bureau of fisheries propagates food fishes, cares for Alaskan salmon or Pribilof Islands seals, studies deep-sea fishing grounds; the coast and geodetic survey, precise coast measurements; the bureau of lighthouses, protective coast signals; the bureau of standards owns exceptional laboratories. The treasury department includes our coast guard service, public health service, construction of public buildings, engraving and printing experiences. The department of the interior administers our national parks; the extensive field service of the geological survey; bureau of mines; or reclamation service developing national irrigation projects in arid states. Precisely the more striking fields of national service involve permanent improvements as trunk roads, Alaskan railways, harbor terminals, canals (the Atlantic coastwise canal), electric power-plants and protective forms of flood-control (notably the Mississippi and Ohio River improvements), or drainage of great swamp areas.[57] These engineering projects are widely distributed, in the army engineer corps, office of public roads or the reclamation service.

Educators overlook the wealth of possible vocational experiences under war and navy departments. Army engineers now control river and harbor developments.[58] Modern war ex-

[56] James, W. The Moral Equivalent of War. American Association for International Conciliation (New York). No. 27, 1910. 20 pp.

[57] With national service staff and skeleton forces, national projects might rapidly absorb surplus labor during depression, thus restoring confidence.

[58] As the St. Johns Drainage District (Fla.), Little River Drainage District (Mo.), Miami Conservancy District (O.).

Traver suggests "on a large scale the method found so successful in building the great Panama Canal, namely, place the great reclama-

pands their functions. Deployment at great depth sheltered from modern heavy guns and aircraft observation, requires an immense construction of field fortifications, by technical skill and tools. Engineering experiences involve surveying, bridging streams, building networks of military roads and railways behind entrenched lines. Huge government munitions plants should afford educative experiences (as mechanical or electrical workers or in explosive plants as chemists), modeled after corporation schools. The navy department has bureaus of ordinance, machinery, construction and repair of ships, yards and docks.[59] Naval officers are increasingly master mechanics and sailors are taught useful trades.[60] Enlisted specialists of the coast artillery include electricians, engineers of power plants (steam, oil, gasoline), surveyors and draftsmen for the coast defense. The army signal corps is a ready training school for mechanics, electricians, photographers, aeronautical experts. The corps has built high-power radio stations, and constructed the commercial cable to Alaska. Its radio companies are trained to use wireless equipment; wire and outpost companies as telegraph and telephone operators; telegraph battalions to install semi-permanent lines. The immense development of aero squadrons requires aviation schools teaching the flying, maintenance and repair of aeroplanes. As every army organization is self-sustaining, mechanics, carpenters, blacksmiths, saddlers, teamsters, cooks and bakers, make up a necessary part of the personnel. The quartermaster's corps afford experiences with transportation companies on transports and docks, with motor truck companies, and commercial experiences. The medical corps offers experiences in camp sanitation and care of men in the field. Sanitary achievements at Havana (1901) or the Panama Canal (1904) demonstrate its public health work. In fact, these departments furnish extraordinary service in emergency.

The National Society for the Promotion of Industrial Education has assisted a tendency in the professional army to pay young men wages while learning their trade. The secretary of war (1916) was authorized to increase opportunities for vocational training in agriculture or mechanic arts to soldiers

tion projects, the great road building schemes, the great Mississippi River Improvement and other great and much needed public works under the control of the U. S. Army Engineers." Cf. an office of public works.

[59] Cf. the mercantile fleet planned by the federal shipping board.

[60] Special trade schools in the navy service include machinist school (for re-enlisted men), electrical schools (general and radio), artificer school (plumbers and fitters, blacksmiths, carpenters, painters), hospital-corps schools (pharmacy and nursing) or commissary schools (cooks and bakers).

in service preparatory to leaving; and civilian teachers may aid.[61] Traver has suggested an army trained in outdoor labor (earth work, concrete construction or operating machinery) on great national projects under army engineers, instructed in effective co-operation and camp sanitation, preparing each individual for normal processes.[62] Organized units with equipment, would shift from project to project.[63] Special continuation classes as in hygiene, geography or elementary engineering, would reinforce these useful experiences.[64] Traver would add 5-hours weekly drill, with a possible 3-months intensive military training. Quick proposes the conversion of army posts into great army schools, operating with reference to nation-wide educational and industrial needs.[65] One-year enlistments (16-35 years) by forcing competition with civilian life, insure educational efficiency.[66] The Post plan would relate four-years enlistment to our social system by limiting military training to 12, 2, 1.5 and 1 month, reserving nearly three years for vocational training (in government shops).[67] Mahin also suggests an "industrial militarism" which will leave enlisted men efficient industrial units.

Universal service should present a level from which to measure educational systems on a national scale.[68] This gauge is "in terms of life out of school."[69] With performance of life acts a rough measure of individual abilities, service tests should

[61] Fisher suggests military life be made attractive through vocational training, increased pay, shorter enlistments, and withdrawal of officer-caste system.

[62] Traver, H. G. Invincible America, A Plan of Constructive Defence. Society of Constructive Defence (New York). 15 pp.

[63] Among 533 applicants for service in such an army, Traver reports 25% 18-19 years, 40% 20-24 years; roughly 20% had attended high school.

[64] Cf. academic instruction throughout the naval service and at all army posts (for enlisted men).

[65] During army service, boys should be quartered in tents, but receive indoor school accommodations. Civilian teachers supervise the studies (3 hours afternoon, 2 hours evening). Quick suggests instruction for the foreign-born (in English); unskilled boys early eliminated from school; negroes and Indians needing industrial training; boys wanting special mechanical, chemical, engineering or agricultural training; boys from regions lacking school facilities, boys preparing for high school, for college or technical institution.

[66] Quick, H. A New Volunteer System. Proceedings of the Academy of Political Science. Vol. VI, 1916. pp. 681-6.

[67] Post, C. F. The Army as a Social Service. Survey. Vol. 36, 1916. pp. 201-2.

[68] Registration for service is in effect a census of the vocationally and physically unfit, and offers a statistical basis for nation-wide educational reform.

[69] Meriam, J. L. Measuring school work in terms of life out of school. School and Society. Vol. V, pp. 339-42. 1917.

quicken school work. "Plattsburg" is equally a measure of physical education and model of intensive outdoor exercise.[70] With the healthiest outing many will ever experience and self care practised under actual field stress, federal training camps should consummate physical training in the schools.

As a great civic movement, Plattsburg is an institution peculiarly American. Its camp and field mingle all boys and level artificial relations.[71] Boys take its training seriously "because they feel that it is linked to tremendous realities." When made national, this socialized education will express equality of service. Training for national defense "is the *act* of being republican, it is the *act* of being democratic." If we are to have an integrated nation, there is a major assimilation which this civic training guarantees. In the United States (1910), 14.7 per cent the total population is foreign born. Among 493,076 foreign-born white boys (15 to 20), barely 11 per cent attend school. Our immigrant masses own over 3 million unable to speak English. Even with night schools for immigrants on a community center basis, community of service should remain.[72] "We have little that teaches subordination to the public good or that secures effective capacity to work co-operatively in its behalf." Co-operative activities might be taught apart from their associations with war, but (as Giddings suggests) there is very little indication that they will be.[73] War alone brings adequate social pressure. Universal service should enable all boys to learn civic duty by sharing defense or conserving national resources. Actual participation should mean deep, discriminating interests in the activities of current government departments. It should afford a definite alignment upon which to nationalize our system of education.

Constructive effort overshadows military training, but an army adequate for national emergency must precede service in non-combatant branches. "Special military training could be given as a branch of this service to those who were best fitted for it." An army of a million men would be less than 1 per cent our population.[74] The General Staff plan (February)

[70] Plattsburg is "a generic term, which applies to all camps where the Plattsburg spirit and the Plattsburg method of training prevail." (Major-General Wood.)

[71] Earlier excessive training by women teachers is partially counteracted.

[72] 11 states make grants for evening-school support.

[73] Giddings, F. H. The Democracy of Universal Military Service. Annals of the Amer. Acad. of Pol. and Soc. Science. Vol. 66, 1916. pp. 173-80.

[74] A professional (hired) army other than for training or police, is an anachronism in democracy. The volunteer system is obsolete. (1)

assumes within four years, a first line of 1.5 million trained reservists; by the close of the eleventh year, 1.5 million second reservists (able to mobilize within 90 days). Roughly 580,000 boys (19 years)[75] are annually available for 11-months continuous training[76] and 4-weeks repetition (for navy and marine corps, 60,000; coast artillery, 20,000; mobile field forces, 500,000).[77] This estimate allows 42 per cent rejections and exemptions,[78] with a further annual loss of 10 per cent. If Germany is decisively defeated one might seriously question the wisdom of training so many millions as soldiers. The staff plan can be equally adapted to non-military activities. Military experiences should compete with other more constructive opportunities for service. With the war's close, this broader selective service might better replace the experiment of our present military policy during this world crisis.

In conclusion, it may be suggested that educators gifted with social imagination might well include in a policy of preparedness planning for universal military training and industrial mobilization, such devices as (1) compulsory state-wide physical education; (2) nationalization of the boy scouts; (3) part-time school control for all boys under nineteen; culminating in (4) a year of national service in great national out-of-door projects. War mobilization should reach its climax in the development of a lasting national system of education.

Wars are now fought by nations in arms. (2) At their onset, volunteers are unofficered, unequipped, untrained in highly technical warfare. (3) Volunteering is indiscriminate, involving workers in munitions and food production and supports of families, with maximum economic disturbance and pensions for dependents. (4) Volunteer systems are undemocratic shifting an elemental burden to the few (best). Recruiting is worked by unreasoning social compulsion or emotional advertising; finally becoming mercenary, dependent on bounties (Civil War). (5) The danger in democracy is not militarism but the difficulty of arousing even minor preparedness.

[75] Nineteen years is the youngest age for intensive military training to advantage; with large numbers (trained 19-21), service may precede serious family and vocational ties. The present universal service act meeting actual war, places the minimum at 21 years.

[76] Cf. the Chamberlain bill (S. 1695) which called for 6 months intensive training in the field.

[77] The staff plan provides a professional army of roughly 97,000 in overseas garrisons; 29,000 as frontier forces; training cadres (officers and enlisted men) for 16 army divisions; with essential administrative personnel. The Reserve Officers' Training Corps with divisions at one or more colleges in 44 states, affords an important control higher educational institutions may exercise over the citizen army (much as West Point is related to the professional forces).

[78] Discretionary exemptions include pilots and mariners in sea service; persons engaged in industries necessary to the military establishment or maintenance of the national interests; persons with dependent relatives; all physically or morally unfit.

POSTERS AND PICTURES RELATING TO THE EUROPEAN WAR

By Louis N. Wilson, Librarian, Clark University

In August 1914 immediately after the breaking out of hostilities Clark University Library decided to make as complete a collection as possible of the printed material dealing with the great conflict, and we at once instructed our booksellers to send us, for inspection, any and all books and pamphlets relating to the war, as soon as they were published. I also wrote to personal friends in Russia asking them to send us any items of interest that appeared in that country on the same subject. Toward the end of 1914 we received from Mr. and Mrs. Frederick M. Corse of Petrograd a few of the first Russian war cartoons. They were not particularly artistic but they were most interesting and attracted a great deal of attention as coming from Russia and as the first of the war posters to be seen here. Then followed the exhibition of English recruiting posters by Mrs. Winslow Warren in Boston; of these we purchased as many as we could and thus we were committed to collecting posters and pictures as a part of our war collection.

In December 1916 Mr. Louis Raemaekers consented to design a special book plate for this collection, the receipt of which we are now impatiently awaiting.

Of books and pamphlets dealing with the war we have received over 3,600. A few of the German books Dr. Lyon reviewed in the April 1917 issue of the Journal of Race Development (vol. 7, pp. 385-409) and the members of the Seminary in History have reviewed some of the English and American books for the July issue of the same Journal. Since March 1916 we have received practically no German material, but we have every reason to suppose that some 2,000 or 3,000 items are awaiting the day when the war shall end and they may be shipped to us. But the literature of the war is not our present task, so let us turn to our subject.

In addition to 2,000 of the official French photographs our collection now numbers 1,060 Posters and Pictures, divided by countries as follows:

England	117	Italy	19
France	437	Japan	13
Germany	160	Australia	7
Russia	132	Canada	32
Holland	143		
			1060

These are all single pictures or sheets that have been mounted on cotton cloth to ensure preservation, and does not include a large number of bound volumes of Gift Books, cartoons and illustrations dealing with the war, of which we already have over one hundred and fifty.

ENGLAND. The first posters were issued in England for recruiting purposes. England was the only nation in Europe at the time the war broke out that did not have a system of compulsory military service. With a standing army of only 200,000 soldiers she was ill prepared to enter the great conflict on land and would have fallen an easy prey had it not been for her sea strength—if, indeed, she could have entered the war at all.

Faced, then, with the necessity of raising troops and faced also with the Englishman's aversion to compulsory service, and a large standing army—an aversion dating from the days of the Stuarts—there was but one thing she could do, appeal to the patriotism of her people and induce her sons to enlist for the war. A national recruiting committee was formed and under its auspices over three million men were added to her fighting forces in the course of two years. Now that we face a somewhat similar problem we are told that England made a great mistake in not adopting conscription in August 1914, as she finally did in 1916, but it is very doubtful if a conscription bill could have passed the House of Commons in August 1914. At that date the English were not "keen" for war and their own grave danger was not apparent to them. Even two years later there were many who dreaded and fought the passage of a conscriptive measure.

One of the first evidences of the work of the Parliamentary Recruiting Committee was the appearance throughout Great Britain of the recruiting posters, ranging in size from, roughly, 58 x 39 in. to 30 x 19 in. The committee evidently had the assistance of experts in this field as the posters themselves, and the results they achieved, amply testify. The pictures are simple and avoid detail. A single figure of a man in uniform beckoning, and not a word of print on the sheet; a soldier with gun and bayonet, a black figure silhouetted against a yellow background and only the words "Be Ready. Join Now." A map showing the southern coast of England and the northern coast of France on which stands an English

soldier in khaki shading his eyes and looking toward England, with the words "Boys, Come Over Here You're Wanted." The figures of two English soldiers on the crest of a hill with fixed bayonets, silhouetted against a rosy sky, and the words "Don't Stand Looking At This. Go and Help!" These are, perhaps, among the best of about 150 that appeared. Historical figures are almost entirely absent. There is one that bears the face of Earl Kitchener and his appeal for volunteers; another with battle ships and the figure of Lord Nelson, with the words 1805 "England Expects" 1915 "Are you doing your duty To-Day." One showing the map of the British Isles and the face of King George.

Almost all are pictorial, the notable exception being the largest sheet of all, measuring 78 x 58 in., headed "Remember the Lusitania" and after recounting the verdict of the coroner's jury, "It is Your Duty to Take up the Sword of Justice to Avenge This Devil's Work. Enlist To-Day."

Later on when the War Loans were put out, about 25 posters were issued by the Parliamentary War Savings Committee and these again proved very effective. They are about all of the smaller size, 30 x 19 in., and are not so interesting, pictorially, as the recruiting posters.

Taking these English posters as a whole one notices three things; artistic merit, simplicity, and size. The aim is to attract attention and to hold it. In this respect the larger ones seem to have been most effective.

Other posters were issued, some being reproductions from *Punch,* and some drawn by Spencer-Pryse and by Frank Brangwyn, these latter often commanding high prices as works of art. One of Brangwyn's figures "The Prisoner" shows a face peering in at the grating of a cell where a soldier is seated, with head buried in his arms on a table. The whole attitude of the figure is indicative of despair and it is a striking bit of great artistic merit. Many of these pictures now sell at from five to ten dollars each, while his "Violation of Belgium" has brought as much as twenty-five dollars.

Of paintings of the war scenes we have none except reproductions of three charming water colors by E. Handley-Read of the Machine Gun Corps.

FRANCE. Although the French needed no recruiting posters they have probably issued more posters and pictures than any other nation. These posters differ from the English in that they are all issued for the purpose of raising money for charitable purposes; for hospitals; for orphans; for the families of those at the front; for those crippled in the war, and for special collections for the Serbs or the Belgians. The

pictorial element is not so prominent a feature as in the English recruiting poster and there is more printed matter, but they have the charm that attaches to almost every thing done by this wonderful nation. So far as we have seen there is no duplication between these and the English except in one case. A French War Loan poster has the figure of a German soldier overborne by a French gold piece on which the Gallic Cock is shown with open beak outstretched; the lettering is "Pour la France. Versez Votre Or. L'Or Combat Pour la Victoire." While one of the English shows a prostrate German soldier under a five shilling piece with the words, "Send Your Five Shillings To Your Country and Crush the Germans."

Pictures dealing with the war France has issued in great quantity, many being the work of well known artists like Steinlen and Lucien Jonas. There are also innumerable sets of a less pretentious kind by such men as Geoffroy, Guy Arnoux, J. G. Domergue, J. Bac, and others.

Some of these pictures are very impressive, as the one showing the German Kaiser stooping over to examine a fallen crucifix and asking "Est-il cuivre?" Another shows a bed room with a bed, a bureau, beside which stand two little girls, one holding a doll in her arms while a boy crouches at the foot of the bed gazing at an open window through which is seen a German helmet and a much beringed hand on the window stool. The little lad says, "Le v'la! Vite, cache ta poupee, Simone!"

Lucien Jonas is perhaps the best represented in this French group. His pictures are excellent and many of them have a religious cast. One shows the interior of a Church; before the altar lies a dead priest, while on one side stands a German soldier drinking from the sacred vessel, and another sits on the altar steps singing or reading from a book. He has a number of spirited drawings of trench attacks; one "Before Verdun" shows French soldiers firing over the walls and the German dead lying thick in front. One other deserves mention—that of a blind soldier being led by a Red Cross Sister. The pathetic figure of the man with his cane in one hand, feeling his way, while the outstretched fingers of the other hand, the head thrown back, and the pitying expression on the face of the Sister, all combine to make a powerful picture.

Of Proclamations by the government and by the City of Paris there are seventy. These cover; Message Du President de la Republique Française a la Nation Française (29 juillet 1914) commençant par ces mots "Depuis quelques jours l'etat de l'Europe." Signé Poincare.

Message du President de la Republique au Senat et a la Chambre des Deputés, le 4 aout 1914. Déclaration de guerre.

Declaration du Gouvernement lue le 4 aout 1914, par M. Rene Viviani, a la Chambre des Deputés et au Sénat. Déclaration de guerre.

Discours de M. A. Dubost, president du Sénat, le 5 aout 1915.

Message du Président de la République, le 5 aout 1915. Signée R. Poincare. Cette affiche commence par ces mots: "Dans l'égarement de son orgueil, l' Allemagne s'est répresentée la France légère, impressionnable, mobile, incapable."

Notices of the Daylight Saving change of time; rules and regulations covering the sale of food, alcoholic beverages, coal, petrol and gasoline, the conduct of the French toward the British troops in their midst, etc., etc.

The 2,000 official war photographs are 4½ x 6 in. mounted on mats 10 x 12 in. They show transportation of food and munitions; munition making; Red Cross sections and ambulances; ruins of churches and houses; etc. Many of these are quite familiar as they have been reproduced in the illustrated papers and magazines.

GERMANY. Immediately after war broke out there came from Austria excellent pictures of the higher officers of the Austrian and German army and navy. (Unsere Heerführer. Maler, Oskar, Brüch. K. u. K. Kriegsministerium, Kriegs Fürsorgeant, Wien. IX.) They are in tint and each one bears the man's signature in fac-simile underneath. They measure 11 x 15 in., and there are here 120 of them. They are a fine looking set on the whole, even to the strong, massive jowl of Von Hindenberg.

From Teubner of Leipzig came a set of twelve plates in black and white. (Führer und Helden. Federzeichnungen von Karl Bauer, 1914). Another set of fourteen with a foreword by Dr. Karl Lamprecht. (Unsere Führer im Weltkrieg, 1914. Springer, Leipzig. Oct. 1914.)

Later on came a portfolio containing ten views of the devastation caused by the Russians in East Prussia, with an introduction by Edgar Alfred Regener. (Bilder aus Ostpreussens Not. Von Bruno Bielefeldt. Bei Georg D. W. Callwey, Munchen.) Showing ruined homes and desolation. Will they ever give to the world pictures of the desolation they have caused in Belgium, France, Serbia, and Roumania.

Another set is "Aus Galizien und Polen" 14 Steinzeichnungen vom östlichen Kriegsschauplatz, von Max Buchever. E. Reinhardt, München. There is another series; (1914-1915 Ein Mappenwerk mit 30 Bildern von Fritz Erler u. Ferdinand

Spiegel. O. Troitzsch, Berlin) of which only the first picture has been received. It is 17 x 20 in., in tint, and shows the German trenches with bombs bursting near by.

Perhaps one of the most characteristic sets, however, is "Zwolf Kriegsbilder" Von B. Wennerberg. A. Langen, München, a series of beautifully drawn and colored pictures showing life in the Fatherland during war time. There are a dozen of them—a wounded officer recounting his exploits to two young ladies; gay crowds about bulletin boards announcing German victories; an officer on furlough being taken out in a boat by two fair ladies; a soldier in a restaurant surrounded by a group of waitresses all smiling upon him while a civilian at a near by table receives no attention; a group of pretty girls gathered about a table following the movements of the army on a map; a sentinel in the street whose helmet is decorated with flowers by two girls; a train all decorated with boughs and loaded with soldiers who are being served with coffee and roses by a group of girls; etc., etc. Not a sad note any where; all joyousness, gay colors, pretty girls and smiling faces. One wonders if this is true today.

Unfortunately the German collection is small at present and we must wait until the war is over to get a correct idea of her point of view as shown in pictures.

RUSSIA. During her earlier wars there were issued in Russia a large number of cheap gaudy prints of battle scenes with a short description of each underneath. These pictures sold for about two cents apiece and were very popular throughout the Empire. In the early months of this war a similar crop appeared. They represent gallant acts of Russian troops; bombs bursting in livid flames and blood flowing in rivulets. Similar pictures have been issued by the Italians and the Japanese. Later came another series of a little higher type—a cossack driving a Turk out of Constantinople; a Russian soldier seated on a drum smoking a cigarette and smiling at a Turk who storms and rages in front of him while in the background are the towers and minarets of Constantinople; a soldier dragging by the ear a German in one hand and an Austrian in the other; a peasant of huge bulk playing ninepins with the Teutonic cities, probably intended to represent the great power of the Russian Empire.

In November 1916 our good friends the Corses of Petrograd sent us fifteen of the new Russian war loan cartoons which had just appeared there. They were a distinct improvement upon previous Russian posters we had received and showed unmistakable signs of having been modeled after the English and French posters, although in no sense copies:—A soldier

with fixed bayonet standing between the walls of a trench; outlines of the figures of soldiers in white lines against a red background; soldiers wrapped in furs on guard with snow covered landscape; machine gun corps at work; sailors loading naval guns, with a Russian navy flag underneath; the Russian double headed eagle driving the German eagle to earth; an aeroplane with mounted gun; a mediaeval horseman in gorgeous trappings carrying the imperial standard—and various pictures of munition works and munition trains, go to make up a very fascinating collection, small as it is.

HOLLAND. With one exception the only Dutch pictures in this collection are those of Louis Raemaekers, perhaps the most important artist figure brought out by the war.

Louis Raemaekers was born April 6, 1869 at Roermond. His father Josephus Raemaekers was an editor and publisher with an artistic bent as is shown by the great interest he took in bringing about the restoration of the beautiful Church of Our Beloved Lady at Roermond in Limburg where the family lived. His mother was of German birth and is still alive and very much in sympathy with the work her son is doing for the allies. When the war broke out Raemaekers was living quietly in the historic town of Haarlem where he was known as a clever landscape artist and portrait painter. He has a wife and three children, two girls and a boy.

The first cartoons appeared in the *Amsterdam Telegraff* and immediately commanded world wide attention. They have been reproduced in millions of copies and have penetrated to every corner of the civilized world. The first pictures were not directed primarily against Germany, but against the horrors and cruelty of war in general. But the treatment of the Belgians by German soldiers aroused Raemaekers's chivalrous spirit and from that time his pictures have created perhaps more rage and indignation in Germany than any other single factor in the war.

It is stated that the German frontier guards offered the Dutch soldiers 12,000 marks if they would hand Raemaekers across the border. Whether this is true or not we cannot say, but the *Cologne Gazette,* in a leading article on Holland, threatened that country that "after the war Germany will settle accounts with Holland, and for each calumny, for each cartoon of Raemaekers, she will demand payment with the interest that is due to her." It is certain that strong protests were made by the German Government which represented that such work seriously jeopardized the neutrality of Holland. Raemaekers was arrested on this charge and it is needless to say he was discharged. He found it convenient to leave

Holland for England where he was received by the Prime Minister, and was entertained and feted wherever he went. He has received the Cross of the Legion of Honour at a special reception held in his honor at the Sorbonne in Paris.

This collection contains Raemaekers' pictures in four sets: (1) Seven parts issued by the Uitgevers-Maatschapp. "Elsevier." Amsterdam, each containing twelve cartoons; (2) The "Land & Water." edition issued in shilling numbers to be completed in twenty-six parts, each part contains twelve cartoons in colors and facing each picture is a page of text contributed by eminent English and French writers; (3) "The Great War." A Neutral's Indictment. One hundred cartoons by Louis Raemaekers. With an appreciation by H. Perry Robinson and Descriptive notes by E. Garnett, London. The Fine Art Society, Ltd. 1916; (4) One hundred and forty-two colored pictures 11 x 15 in., mounted on cardboard 15 x 22 in.

The originals have brought high prices for war charities and are owned largely by wealthy collectors and Art Museums.

ITALY. The Italian posters are here few in number and mostly of the highly colored type. They are evidently printed in New York and may not represent Italy's poster contribution in this war at all.

JAPAN. The Japanese pictures are also of the highly colored, inexpensive kind, issued as "Illustrations of the Great European War." Each one has a number. The highest number here is No. 43 which shows they have been issued in fairly large quantities.

AUSTRALIA. Of these we have but seven. They follow the English in style and color. One in silhouette shows a boy scout standing in front of his perplexed father and the words, "What Will Your Answer Be When Your Boy Asks You 'Father—What Did YOU Do to Help When Britain Fought For Freedom in 1915?' ENLIST NOW." Others show, a soldier on the battlefield with gun raised in one hand and giving the Australian cry "Coo-ee!"; a soldier of the motorcycle corps with bandaged head, pointing to ruins in the distance, with the words "The Latest Despatch. Send More Men!"

But the most striking of these Australian posters is a large one in yellow, black and blue, with the sphinx and the pyramid, and a line of marching soldiers. The text is:—

"When the fiercest battle's ended and the longest race is run,
When peace once more is blended with the shining of the sun,
Will YOU feel Hale and Hearty, as our boys beside the Nile?
Will YOU be able to return your wounded Brother's Smile?
ENLIST!!"

CANADA. The Canadian Posters are, naturally, modeled after the English, the chief distinction being that the Canadian have the text sometimes in French and sometimes in English. Looking over these as a whole one is inclined to give preference to those in French, although all are good. If we were to offer criticism it would be that in most cases they are overloaded with reading matter, and copies of letters in script are never very effective on posters.

There are two good ones calling for volunteers for the Irish Canadian Rangers; two still more striking ones, one in French and one in English, with a single soldier in the foreground and a Union Jack as a background were issued by the Gazette Co. Ltd. of Montreal early in the war, and have not been surpassed by any of the later issues.

On looking over the collection as a whole one notices that the posters of each nation stand out as distinctly different from the rest, except in the case of the crude, highly colored sheets issued in Italy, Japan and Russia, to which reference has already been made.

Some think the poster the best form of advertising and hold that the billboard, suitably located and controlled, might be raised to the dignity of a civic and national asset. Be this as it may, such a collection as is here gathered together is well worth careful study.

THE LECTURE IN COLLEGE TEACHING

By C. A. Lyford, St. Lawrence University

It is easy to read a lecture from prepared notes. It is better to know the subject well enough so one can stand before his class and construct the presentation as he proceeds. If one is indulging in constructive thought himself, he is more likely to lead his students through the argument in a logical manner. By the expression upon one's face, and the occasional hesitation caused by the search for a proper expression, or by the motion of the hand or head which tells of a satisfactory rounding up of ideas preparatory to formulating in a sentence, the student is not only carried on by the train of thought as it unfolds, but is aided in other ways as well. He has opportunity to do a little thinking himself. He may occasionally have opportunity to anticipate. Indeed he is, without being aware of it, encouraged to anticipate; and what is anticipation under such conditions but constructive thought and invention. His inventions are quite likely to be along the proper path, and any incorrect invention is immediately corrected as the instructor proceeds. Cannot the lecture be made a presentation of a problem so that to follow the trend of thought will awaken a little of the spirit of research in the young student? Many lectures to college students are mere statements of facts and ideas so rapidly spoken that the listener can neither reconstruct the thought nor preserve the form as notes. If the lecture can be made the presentation and solution of a problem is not the student who listens virtually solving what to him is a little piece of research? Is there much more to be desired than to instill in our students a little of the spirit of inquiry? It is the belief of the writer that the lecture may, from the standpoint of the student, be the source of ideas or facts, or of both, which may take the place to some extent of actual experience to be gained only slowly in the laboratory or the world at large, and that these facts or ideas should be so arrayed before the student that he is practically bound to work out the train of thought himself, and to construct his own conclusion or theory with the feeling that he has been winning from the field of the unknown or the unassimilated something definite and objective which he can call his own. Ideally the lecture should not be used as it is so often as merely a

source for information which can be equally well gained from books. The chief object should be to vitalize the subject by giving the student opportunity and incentive to exercise his mind in company with that of the instructor. If the mind is not literally exercised the time has been largely thrown away. The writer has known a couple of young instructors whose lectures were merely repetitions of the text. The students were supposed to put a few hours a week upon the study of the text, but they soon found this unnecessary.

The lecturer should *work* before his class as an expert artist works upon his sculpture or his painting. If one wished to study sculpture from Rodin would he merely ask the artist to show him all the pieces he had ever chiselled out, or would he not more likely ask to be allowed to stand by the worker's side while he worked? The real student would attempt to anticipate the master's next move and would try to see the reason for it when the move was made. If conditions would permit, the student would certainly like to work side by side with the master upon the same piece. That man is the best lecturer who gives the greatest opportunity to his students for accompanying him in real constructive reasoning. Bagley has used the term "artistry" in connection with the thought that a teacher should teach as though what he is engaged in is the greatest achievement in life. Certainly judging from experience, it should be rated quite an achievement when a teacher can stand before a class of students and make sure that each and every one *understands* what he has been driving at. A teacher who is not conscious of great effort every time he stands before his class cannot possess the spirit of artistry and he is no better than a book.

One may recognize two sorts of lecture; one whose aim is to bring the lecturer's view before his hearers, or to recount some experience of travel or bit of observation; the other of more academic nature whose object should not be primarily to impart knowledge but to serve as an example of exposition of the *method* of attack and solution of a problem. It would follow from the argument that the lecture should not be employed for academic purposes in subjects which do not lend themselves to exposition in a constructive or evolutionary manner. It may be said that there is a kind of reciprocal relation between the ideal lecture or demonstration and the recitation. In the lecture the teacher should do most of the talking and the student should accomplish at least a minimum of constructive thought; while in the recitation the instructor subordinates himself and the student does most of the talking while his mind is actively engaged not in recalling things from memory, but in carefully working out his argument as he

proceeds. The writer frequently encounters students who lose all power of thought the instant the first word is uttered. This is because most students have in their earlier schooling come to regard a recitation as successful only if they are able to come to class anticipating every possible question and are able to go off at the pull of the trigger, stopping only when the force of the pent-up charge is spent or upon interruption by the instructor. Such students say a lot in a short time if let alone, but much of what they say is of no value; they might spend half the time thinking and half the time talking and get better results, but the thought of thought frightens them much as the feeling of water rising over one's face frightens the novitiate swimmer as he tries to float in the water. In such subjects as do not lend themselves to the proper lecture method, or in certain parts of other subjects, the lecture should be thrown aside and the unadulterated recitation should be used based upon text and collateral study of any sort available, whether laboratory work or further reading. During a recitation an instructor will have plenty of opportunity to make sure that no points go by improperly understood, and at such times he would be justified in giving a few moments to explanatory or descriptive discussion. Any thing that may be done to ensure that the student finally understands the subject matter at hand is legitimate, but to lecture simply because in this way it is easier to be sure that the student has been over the ground, or because it is easier for the student to sit and be amused than for him to study is not justification. If by the time a student is in college he may not be counted upon to cover the ground he is not fit to be in college. It is another matter that he may not entirely understand every little point upon his first reading, for this may be dealt with through the medium of the constructive lecture and the recitation. It is the belief of the writer that some of us are tempted to use the recitation not so much for the benefit of the student as for the purpose of getting by purely mechanical means a basis for estimating his intellectual level. This may be quite as closely approximated through mental estimate by the instructor upon daily contact with the student supplemented by occasional written tests.

To illustrate the writer's conception of the way to make use of the lecture a concrete case will be considered. In the science of chemistry the purely descriptive lecture should find very little place. If a student cannot understand a purely descriptive matter by reading he cannot do so by hearing it. Of course no lecture on such a subject can be given without the descriptive element entering to some degree. A lecture upon aluminium and its compounds which merely recounts

the facts concerning a certain set scheme of topics such as "the element and its occurrence—properties—preparation—uses—aluminium oxide and hydroxide—salts of aluminium—earthenware," etc., never appealed to the writer either as student or teacher as an especially inspiring attempt to awaken interest in the pursuit of the science. The students should study such topics from the text and in the laboratory only after a thorough introduction in the theoretical aspects based upon the place of the element in the Periodic Classification and a proper exposition of the working value of the Electromotive Series, the Dissociation Theory and the Mass Law as they pertain to the strengths of acids and bases, hydrolysis, etc. The student finds described in his text the iron sulphides and carbonate. He may not find any reference to aluminium sulphide and carbonate, and he thinks the book is incomplete and desires to find a book which describes all compounds. He has not been taught the fundamentals of the science. If he had been, he would realize that the reason why elementary books sometimes make no reference to such compounds is that under the conditions of laboratory experience those compounds are not encountered. Moreover he would know the reasons why they are not encountered, and perhaps when he takes up the study of analytical chemistry he could understand why ammonium sulphide precipitates iron sulphide and aluminium hydroxide together and not both as sulphides. A set of descriptive lectures is positive in its information so far as it goes, but it does not explain the hyatuses and omissions. In other words, the student escapes without becoming aware of the limitations of experience and procedure in scientific work. The term "descriptive chemistry" might be dropped from the college curriculum and some better one substituted. Perhaps a different title for the course, one with a little more suggestion of the dynamic, might cause an unconscious effect upon the instructor which would gradually lift him out of the rut of simple description, and give him some incentive to work his own mind a little. Example has a certain pedagogic value even with college students, and a dissipating imitation is always more easily excited than creative imitation is.

Though the question of the relative pedagogic values of a purely lecture course introduction to a science like chemistry and a mixed laboratory—recitation introduction is not germane to the original thought that prompted the writing of this paper, the writer cannot forego making a few remarks concerning beginning the subject of chemistry by the purely lecture method. In academic circles one soon becomes aware of the existence of two armed camps. One of these usually appears

to be a little more on the defensive than the other. One is a little afraid of the other, and the other doesn't care enough for the booty to make an assault on the first, for it believes it sees things going favorably for its interests. I refer of course to the classical camp and the scientist camp. Many well educated people have studied Latin, History, Philosophy, Ethics and Theology, and perhaps have had some " lecture courses in science." Such people took the lecture courses in science in just the same way they did their letters courses. The exercise of the memory is the chief aid in gaining such an education. How many are the men whose education is based almost entirely upon the things of the past or the empty speculations of the future. How many are the ministers whose sole preparation in any subject calculated to teach methods and practice of physical precision was gained by the same method that imparted to them their training in Hebrew and theology. Many ministers have become college presidents. Believed to be leaders in the educational world, they are more often hustlers for money. It is difficult to believe that one whose education has been gained almost entirely without exercise of the physiological senses of perception can possess the power of apperception to a degree sufficient to sympathize with the recent trend in education as it is being worked out by pedagogues of laboratory training in daily contact with students. The champion of the Classics must claim either that an education may be satisfactorily obtained without the coordinating development of the primary senses, or else that the study of the Classics does train all the perceptive senses equally well as the laboratory studies do. The scientist has the feeling that a real education, one which equips the student to meet the new problems of the future, can be obtained only through training of the perceptive senses, in observation, in construction, in formulation of ideas, and finally in lucid statement of the thoughts which have actually been engendered as the result of his experience. Elementary laboratory exercises are the experiences of the young beginner. If we take them away do we not lower the educational ideal of the scientist to the memory level as typified in classical study? Without attempting to cast a deciding vote in favor of either camp it may be said, however, that it is a shame for a scientist to think he is teaching science to beginning students when he gives a semester's time to a course of lectures in " Descriptive Chemistry," especially if no laboratory experience be given. It is a shame if for no other reason than that he is throwing away the only distinct advantage over the Classics claimed for science studies in the educational equipment of the student.

The thoughts expressed above represent an ideal concern-

ing the lecture method toward which the writer has always looked. He has never attained that ideal, but has more nearly approached it when working with adequate facilities than when shifting along without them. In many institutions there are three men doing the work that two might do if provided with proper material facilities and conveniences. Trustees and presidents sometimes appear to think it better economy to wear out their teachers and get poor results than to spend a little more on equipment and produce the conditions for a much more satisfactory academic atmosphere. Doubtless it is in some cases lack of proper equipment that tempts the college teacher of science to overdo the lecture method of instruction and indulge in pure book description into the bargain.

A RENAISSANCE IN THE SCIENCE OF EDUCATION

By Archibald G. Peaks, New York University

I. What Ought to be Done?

The question of what ought to be done in education, is largely concerned with the aim of education. Since the necessity of educating the rising generation became a conscious problem in the world, the question of "What Ought to be Done" has dominated the thought of rulers, philosophers, and ethical, social and religious workers everywhere. For Confucius, education had two aims, (1) to develop character, and (2) to preserve social stability, and the means he employed was a great mass of ethical and social teachings covering every possible action of the individual, and practically every possible occasion which could arise. Thus each generation exactly imitated the previous generation in the minutest details of ethical and social conduct, and social stability was obtained at the expense of progress.

For the Ancient Egyptians and the Hindoos the practical considerations of Caste gave the aim, and the various classes of society were accordingly instructed in their several rights and duties. Among the Jews, and throughout Europe in the Middle Ages, the religious aim was dominant, hence education was largely religious in character. The ancient Athenian education was fashioned in accordance with its ideals of harmony, beauty, and symmetry, while that of the Spartans was necessitated by the practical considerations involved in keeping its conquered peoples in subjection. Both of these peoples adapted the means to the attainment of these diverse ends, hence the contrast between the educational practice in Athens and that in Sparta.

In our own time, many attempts have been made to influence the public schools by those who urge changes in them for practical reasons. In our country any one who urges the making of our education more practical can get a hearing at any time or place, and this argument has accordingly been much misused. In general we may say that if the aim of education is usually based on theoretical considerations, the means used in its realization are largely chosen because of their practicability. The public high school, the junior high

school, the vocational school, the pre-vocational school, the manual training school, the trade school, the technical school, the commercial high school, the truant school, the agricultural high school, the school of home economics, the open air school, the junior college, the municipal college, and the municipal university, are among the latest of the modern responses to the practical demands of the present.

Besides the general, national and public educational movements outlined above, the work, efforts and accomplishments of all educational theorists and reformers belong here. They are interested in "What ought to be done" in education from their special point of view. They set out to reform education by pointing out abuses and suggesting remedies for them, which will aid in making education realize the aim they have set for it, and proceed to test aim, means and methods all from their especial point of view. First among these we have the religious and ethical reformers, who take the "Formation of Character" as the basis of education. Then follow the rationalists and logicians who for different purposes would have the development of the reason as the chief aim of education. Again we have those who base their system of education on evolutionary principles, on a biological basis, or chose for their motto, "Mens sana in corpore sano." We have also the militaristic conception of education which might be conveniently grouped with those who say the aim of education is "good citizenship." Still another group would base their aims for education on sociological, on socialistic, on individualistic, or on anarchistic principles." Another group, consisting of experts in special fields of endeavor, would have for the center of education proficiency in the same field as themselves, while other groups would have "acquisition of knowledge," "formal discipline of the mind," "harmonious development of all the powers of mind and body," or the development of "aesthetic appreciation" as the aim of education. A very large group would have a psychological basis for education, another would educate "according to nature," while still another large group bases its educational aims on practical considerations.

Among educational theorists, we often find two or more aims which are more or less unrelated, set for education, as for example John Friedrich Herbart who bases his educational theories on ethical and psychological considerations; John Dewey, who urges ethical, logical, psychological and sociological principles in his discussion of educational aims; and Nicholas Burray Butler, who bases education on the scientific, literary, aesthetic, institutional, and religious inheritance of the race.

In each instance the educational theorist goes on to criticise educational theory and practice from his own special point of view and to suggest means for their improvement which are necessary from his special point of view. We have no fault to find with those who try to settle the aim of education on the basis of some especial consideration, but one should not take them too seriously. Anyone who undertakes to settle such broad and important questions as those underlying our educational aims and practice on the basis of his own prejudices or narrow personal view point will never get anywhere. Such men are preachers and poets, not scientists. We may be aroused and inspired by such men, but we are never sure that we are going in the right direction.

Is there no hope for a solid foundation for educational practice? Viewed fairly and impartially, we are compelled to decide that one who considers only "What ought to be done?" in education will never be able to settle permanently questions of educational practice. We do not wish to belittle the value for educational progress of the man who proposes theoretical changes in the aim of education. He may perform a great service to the world by contributing to the general aim of education, but he can say little or nothing of the details of practical school work. He has no final answer for the main problems of education which are (1) what to teach, (2) how to teach, and (3) when to teach it. Educational practice can never be firmly established, nor can a scientific basis be laid for it, by those who consider only, "What ought to be done?," without also considering "What has been done?," and "What can be done?"

II. What Has Been Done?

The most obvious response to the question "What has been done?" and its message for educational practice, is that we should observe the results of our present day education, as standards by which to judge the work of the individual teacher, or to judge educational efficiency along any special line or in general. This is the usual way we judge the achievements of men and women. "Get results," is the injunction given those who are entrusted with the conduct of business enterprises. And we need not be surprised to find those who would set up standards for educational efficiency on the basis of the results already obtained.

This attitude toward educational practice is especially prevalent at the present time. Numerous so-called tests of the results of educational work have been made, and on the basis of these results, investigators have attempted to draw very important conclusions as to educational practice. They judge

the efficiency of the teacher in terms of the ability of the pupils as shown in the results of a test or tests, in comparison with the so-called "standard tests" which are claimed by their authors to be scientific standards for judging school efficiency in a special field such as the spelling or the arithmetic efficiency of a certain grade.

At the present time the country is flooded with scales and tests for intelligence, spelling, composition, penmanship, arithmetic, and standard tests of all sorts. They are used especially by school boards, departments of education, superintendents, and principals in the rating of teachers, and by teachers to illustrate standards of work. On the basis of the results of tests alone, wonderful conclusions for the science of teaching have been drawn. In many cases the conclusions given are merely what the investigator wished to find and have absolutely no relation to the results. This is their most glaring defect, and is found in practically all of the earlier investigations. Those who have employed such tests have been so anxious to prove a pet theory that they have explained the results not on their face value, but on the basis of their own introspection.

This error has been seen by some of the later investigators who have endeavored merely to set up scientific standards by increasing the number of records and treating them statistically. The results from tests have been collected by thousands and after being treated statistically, the average result is taken as a standard of individual efficiency. These so-called "standards" have been claimed by their promulgators as absolute standards of individual and pedagogical efficiency. Their devotees claim that the progress of a pupil or the efficiency of a teacher, or the efficiency of the educational system of a town, city or state may be accurately evaluated by the use of these standard tests. They claim that the efficiency of a teacher's work can be measured by these units as certainly as we measure time and space.

Let us examine these tests and standards critically that we may the better evaluate them. In the first place we cannot judge the efficiency of any teacher, pupil, or educational system on the basis of the results alone. Results are of no value to the science of education unless we know the conditions under which these results were obtained, and we must interpret them in the light of their contributing causes and of the conditions under which they are obtained. Many instances are known of children who were thought dull when tested by examinations, but who later proved to be leaders among men. We cannot judge of the real proficiency of children on the

basis of efficiency tests. Without entering into a discussion of the larger problems of methods of teaching, let us establish first scientific criteria for evaluating the proficiency of children.

Three kinds of criteria may be used as shown in the accompanying tables:

Criteria	How considered	Grade in per cent			Rank		
		A.	B.	C.	A.	B.	C.
Efficiency tests	Accuracy and completeness of reproduction as shown in answer to questions	90	90	90	1	1	1
Psychological criteria	Amount of effort used by each student.	95	80	70	1	2	3
	Repetitions used	25	20	15			
Pedagogical criteria	Repetitions needed if economical methods of study were used	18	12	15	3	1	2

In the table above, are three students who are of equal rank when judged by an efficiency test alone, but when judged by the effort put on the work must be ranked differently. The third rank is based on the actual ability of the students as it should be when judged by the time and number of repetitions each would have used under economical methods of study. It is very evident that the three have different mental abilities, and that the student who needs only 12 repetitions is of superior ability so far as memory is concerned to the other two. Again, if we should cross question the three students concerning their understanding of what they wrote, we might find that C was superior to the other two, and if they had been taught differently, A might have been more proficient than either B or C in making use of the facts. What was the real value of the results when judged by efficiency alone? They do not even give a true value to the past performances of the student, and much less do they show themselves worthy of becoming standards for judging educational efficiency from a scientific point of view. Really vital factors of education cannot be seen by one who judges by tests alone. And will it serve any purpose or add any validity to the use of such standards if we average the marks of 500,000 tests instead of three? Will the standards be worth any more? The only possible answer must be that as a measure of individual achievement, the statistical treatment of such results does not add a whit to their value as standards for judging school progress.

Of what scientific value, then is a composition scale based on the results of a test when we do not know the conditions under which the composition was obtained? Can any one simply take a group of compositions and by selecting what he

thinks is an average composition set it up for a standard without knowing the technique of the teacher or the history of the individual? Can you take mere verbal expression as a true expression of the inner life of the child? Will the mere statistical treatment of the snap judgments of individuals on the basis of the results from tests alone give us a true standard of measurement of educational efficiency?

Most statisticians deny that you can discover causal connections by the statistical treatment of data for the reason that you cannot determine causes from effects alone without verification. To be of scientific value, the results from educational tests must be interpreted in the light of all that has preceded them, and must be related to the aim, means, methods and procedure both in the learning and in the testing. The results from a very few children where the conditions of learning and of testing are carefully controlled, are of immensely more scientific value than the results from a million children where the causes are neglected.

Have tests and scales which deal only with results any scientific value? If they have any value it is merely temporary to illustrate what results have been obtained from tests in other places. But they never are and never can be a true illustration of what should be expected from a class or grade. The greatest difficulty with such tests and scales is that the promoters make such extravagant claims for them. The application of such standards by school supervisors cannot but result in gross injustice to many excellent and painstaking teachers, while it may often induce teachers to show dishonest results. The criticism given as a result of such tests is rarely helpful. It is destructive to those who do not secure similar results, whether more desirable or not, and worthless to those who show high superficial results on account of memory cramming, dishonest work by the pupil, or false methods by the teacher. The greatest good a teacher may do along many lines is incapable of being judged by written tests. The use of such tests inevitably tends to lower the moral tone of the teacher and of the school. It makes supervision destructive where it should be constructive (seeking the causes of poor work and to eradicate them). It makes the supervisor critical of results when he should be critical concerning the causes which lead to poor results, and it is rare indeed that a supervisor who is merely critical of results can at the same time be helpful.

It becomes increasingly evident therefore, that when judged from any point of view the so-called "standard tests" have little or no value, and they may be positively injurious. As

standards for the judgment of teaching efficiency they are worthless unless the conditions under which they were obtained are carefully taken into account, and the teacher should be criticised and aided in her control of the causes which produce the desired results rather than on the results as such. The measurement of "What has been done?" is then, of little or no scientific value for education unless the conditions under which they are obtained are carefully controlled. Nor can the errors involved in neglecting the technique of teaching and learning when such tests are to be made, be overcome merely by treating the results statistically.

Can we then, come to any scientific conclusions for education on the basis of measuring "What has been done?" Shall our educational practice in the future be guided only by the results of "What has been done?" and theoretical speculations as to "What ought to be done?" It seems very evident that real progress in education can be controlled by neither of these considerations alone, nor by both of them combined. Before we can make any permanent decision, we must also discover "What can be done?" on the basis of the psychophysical nature of the child, and then we may be able to reach a permanent decision as to "What must be done?" in order to insure permanent progress in education.

III. What Can Be Done?

In the preceding discussions we have clearly shown that permanent educational progress cannot be made on the basis of "What ought to be done?" alone. Nor can we make any appreciable permanent gain by setting up standards of "What has been done?" without knowing all the contributing causes, and the conditions under which these results were obtained. The answers to these two questions therefore, must be supplemented by that given to the question "What can be done?"

Up to the present time, in all attempts to find out "What can be done?" in educating the child, the child itself has been too little studied. We have given too much time and attention to courses of study and methods of teaching, and at the same time we have almost entirely neglected to scientifically investigate the results by various methods of learning. No one really believes that one person can really impart knowledge or skill to another. All the teacher can do is to direct the mind of the child in learning. She can arrange and classify facts, and present them singly or in relation to other facts, once or repeatedly, and by her skill she can hold the attention of the learner more or less closely directed to the subject under discussion. But the learner himself must do the acquir-

ing, and this acquisition is controlled by the laws which govern his powers of acquisition.

At present, these laws are but little known. We have been so much concerned with what to teach, and how to teach, that we have almost entirely neglected the all-important matter of investigating the best and most economical methods of learning. Though many facts concerning the nature of the growing child have been pointed out by students in various fields of scientific endeavor, these facts have been observed, organized, and classified from the point of view of the respective sciences, and not from the point of view of pedagogy. Psychology, for example, deals with mental phenomena but cares more about analyzing the mental processes than about the use of the mind in acquiring knowledge. Child study also does not meet our needs as it deals more with the growth and development of children under school age.

What we need is a science of pedagogy based on the answer to the question, "What can be done?" which shall consider not only what to teach, and how to teach, but will also consider the economy and technique of how to learn. Before any method of teaching or learning is commended to teachers, it must be thoroughly tried out under school conditions, and based on principles of pedagogy established by recorded observation and experiment, where all the conditions of teaching and learning are carefully controlled, or scientifically observed. What we most need is the requisite pedagogical criteria by which to judge pedagogical efficiency, and these criteria must be developed by the same methods used in all the sciences, viz., recorded observations, and experiments where the conditions are carefully controlled.

We have, then, a new answer to the question "What ought to be done?" which applies directly to educational practice, to the relationship between the subject matter and the mind of the learner on the one hand, and to that between the teacher and the mind of the learner on the other. To the teacher, the command comes plainly and forcefully, "*Use only those methods of teaching which will utilize the most economical and hygienic methods of learning.*"

We must apply the same criteria to the use of school room results as standards of comparison for school work. Only those results which are obtained under school room conditions, and which have utilized the most economical and hygienic methods of learning should be used as standards of measuring school room efficiency. "What can be done?" must be discovered by systematic experimental investigation before we can hope for any scientific basis for educational practice.

This question of "What can be done?" in spite of the many attempts to answer it made by educational theorists, has long remained unanswered. But within the last few years, two scientific movements in pedagogy have arisen and been devoloped in Germany, which have adequately recognized the problems involved in creating a science of pedagogy, and have attempted to discover "What can be done?" The first is the movement known as experimental pedagogy, represented by the work of the late professor Ernst Meumann, and the second is that known as experimental didactics, represented by the work of Dr. Wilhelm A. Lay. These men and their followers have set out to solve by scientific methods of investigation, two large groups of problems (1) to discover the psycho-physical nature of the school child as he grows and develops (experimental pedagogy), and (2) to investigate the most hygienic and economical methods of learning by the school child (experimental didactics). The problems of experimental pedagogy are best investigated in a pedagogical laboratory, while those of experimental didactics are best studied under actual school room conditions.

They use the methods of investigation which have yielded such large results in the other sciences, viz., systematic recorded observations, and experiment, the questionnaire in the early stages of investigating any problem, measurements when taken by experts, and statistics based on measurements of facts which are capable of measurement. In this country, the work along these two lines has been most systematically developed in the New York University School of Pedagogy, under the name of experimental pedagogy. During the past five or six years, many important investigations in scientific pedagogy have been made by the students of that school, and much has been done for the future of educational practice along these two lines.

It is therefore, only by the use of the scientific methods enumerated above that we may find a permanent answer to the question "What can be done?" And only through the science of experimental pedagogy (including experimental didactics), can these pedagogical questions based on the answer to this question be solved. In order that we may study education scientifically, therefore, there is a great need for pedagogical laboratories and experimental schools each under the control of a broadly educated and unprejudiced director who has the real scientific and critical attitude toward educational practice. Let us hope for the day when both these institutions may be seen in every large city and every state in our land.

No doubt now exists in our minds that progress in educa-

tion is possible only when we consider "What can be done?" as well as "What ought to be done?" and "What has been done?" In the answer to these three questions, we find the answer to the fourth and last of the series, "What must be done?"

IV. What Must Be Done?

The answer to this question is to be found only after the consideration of the answers to the other three (1) What ought to be done? (2) What has been done? and (3) What can be done? No satisfactory answer has been given to any of these three questions as yet. The history of education as studied in our schools, deals very largely with the aim of education, but tells us very little about actual school conditions. It also neglects many educational agencies such as myths, proverbs, manners and customs, literature, the family life, the government, and many other practical considerations which influenced educational practice in the past even more than the theoretical teachings of priests and philosophers. Its answer to the query "What must be done?" is not at all satisfactory.

Before we can build up a science of education we must find out what can be done under the most favorable surroundings. Not all pedagogically possible things are pedagogically necessary, but before we fix any aims or standards for the measurement for education, these aims and standards must be pedagogically possible of achievement, i. e., we must know as a result of a scientific pedagogical investigation that they can be realized in educational practice. The answer to the query "What must be done?" is plain and unequivocal. *To insure permanent and lasting progress in education we must establish it firmly on a scientific basis.* This can be done only by using the methods of all the sciences, viz., systematic recorded observations, carefully controlled experiments, measurements taken by expert investigators, questionnaire supported by verified introspection when no other method can be used, and statistics based on facts that can be measured quantitatively.

It may be well here to contrast the results from the psychological-statistical test, and those from the scientific-pedagogical experiment. By psychological-statistical data, we mean that derived through the compilation and statistical treatment of the results from tests collected from various sources without control over the conditions or knowledge of the contributing causes. The results from such tests cannot be used as a basis for any scientific conclusions whatsoever. By scientific-pedagogical experiments, we mean the use of results obtained only by scientific methods of investigation.

There are also several differences in the aim or purpose of psychological and pedagogical investigations, viz.,

(1) Experimental psychology investigates the mental processes for purposes of analysis, while experimental pedagogy investigates the possibilities involved in using the mind and cares nothing for mental processes as such.
(2) Experimental psychology seeks to establish the general laws of the mind while experimental pedagogy is especially concerned with individual differences, in pupils.
(3) Experimental psychology investigates all the mental processes of the mind while experimental pedagogy confines itself to investigating the operations of the mind of the school child in learning.

That there may be no question as to the method of procedure in making a scientific pedagogical investigation, I will here outline the method under four main heads:

(A) Preliminary considerations
    1 The phenomena observed must be capable of some sort of quantitative measurement
    2 The investigator must have complete authority to arrange the phenomena to suit the purposes of the experiment
    3 The method of procedure must be governed throughout by certain pedagogical purposes
    4 The investigator must control the circumstances to suit the purposes of the experiment
(B) Working hypothesis which will state in detail the pedagogical aim of the experiment, and according to which the phenomena studied should be arranged
(C) The main investigation, which consists of
    1 Preliminary tests to perfect the technique and eliminate practice effects.
    2 The main investigation upon the results of which the conclusions will be based
    3 Controlling tests to check the results obtained in the main tests
(D) Verifying tests, made by the same or by other investigators under similar or varying conditions, by similar or different methods.

It is only by making such arrangements, by following such methods, and by using all possible precautions against error, that we can secure results upon which scientific pedagogical conclusions may be based.

The laying of a scientific groundwork for educational prac-

tice is then to be no longer a matter of theory, but one of fact. Only those principles and methods of teaching and learning which have been established as a result of scientific pedagogical experiments are to be used in order to obtain the best results. The criteria of experimental didactics must be applied to all school work, and these demand that only the most hygienic and economical methods of teaching and learning shall be used. The hygiene of the mind demands that we must not misuse or abuse it in any way. We must discover its nature, and follow its laws in learning, if we wish to achieve the best results from its use. The economy of learning demands that school work shall be done with the least possible expenditure of energy by both teacher and pupil.

What, then, must be done? The first task before the workers in the field of experimental pedagogy is to put before the teaching profession a description of the aim, means, methods, and universal validity of the results obtained by experimental pedagogy. The next is to develop a critical scientific viewpoint in educators everywhere so that they may properly evaluate proposed changes in our educational practice. The third is to find those who are enough interested in the establishing of a scientific basis for education to do the work required. The fourth is the establishment of pedagogical laboratories and experimental schools, not in the hands of politicians and spoils hunters, but directed by men and women who have the real scientific spirit of investigation, and the altruistic spirit of service to the great cause of educational progress. The fifth and final necessity is that we judge all educational practice by the acid tests of experimental pedagogy, which are that education must be based on the psycho-physical nature of the school child, and that only the most hygienic and economical methods of teaching and learning shall be used.

BOOK REVIEWS

THE WORK OF SAFFIOTTI AND TREVES

1. *La "scala metrica dell 'intelligenza" di Binet e Simon. Studiati nelle scuole comunali elementari di Milano.* By Zaccaria Treves and F. Umberto Saffiotti. Milano, 1911. Pp. 67.
2. Clinica medico-psico-pedagogica. By F. Umberto Saffiotti. *L'infanzia anormale.* V, 1911, 102-116.
3. La psicologia sperimentale nell 'indirizzo pedagogico moderno. By F. Umberto Saffiotti. *Riv. pedag.,* Anno V, Vol. I, 1911. Pp. 8.
4. Psicologia e pedagogia sperimentale nell' opera di Zaccaria Treves By F. Umberto Saffiotti. *Riv. pedag.* Anno VI, Vol. II, 1911. Pp. 10.
5. L'assistenza delgi anormali scolastici e la prevenzione della delinquenza minorile. By F. Umberto Saffiotti. Second Cong. nat. d. Soc. d. Patronata per i Minorenni e per i Carcerati. Torino, 1912. Pp. 9.
6. *L'opera di Zaccaria Treves e la psicologia sperimentale.* By F. Umberto Saffiotti. Milano, 1912. Pp. 28.
7. Sulla legittimita di una psicologia delle menti associate. By F. Umberto Saffiotti. *IV. Cong. inter di filosofia.* Bologna, 1913. Pp. 11.
8. Osservazioni sperimentali sul diverso comportamento del lavoro muscolare nella scrittura durante il calcolo. by F. Umberto Saffiotti. *Riv. d. Psicol.* VIII, 1913. Pp. 11.
9. Note psicologiche su due gemelle. By F. Umberto Saffiotti. *Riv. d. Antrop.* XVIII, 1913. Pp. 11.
10. Contributo allo studio dei rapporti tra l'intelligenza e i fattori biologico-sociali nella scula. By F. Umberto Saffiotti. *Riv. d. Antrop.,* XVIII, 1913. Pp. 34.
11. Sul "Quoziente d'intelligenza" nella misura dell'età mentale in rapporto all'età fisica. By F. Umberto Saffiotti. *Riv. d. Antrop.,* XIX, 1914. Pp. 10.
12. Nuovo modello di segnalatore elettrico della voce. By F. Umberto Saffiotti. *Riv. d. Antrop.,* XIX, 1914. Pp. 5.
13. Forme e contenuto dell 'associazione spontanea nei fanciulli. By F. Umberto Saffiotti. *Riv. d. Antrop.,* XIX, 1914. Pp. 14.
14. Rilievi e osservazioni sul rendimento scolastico nei diversi metodi di educazione infantile. By F. Umberto Saffiotti. *Coltura Popolare,* IV, 1914. Pp. 23.
15. *La misura dell'intelligenza nei fanciulli.* By F. Umberto Saffiotti. Roma, 1916. Pp. 286.

The great variety of interests of Professor Saffiotti will be seen from a mere perusal of the titles given above. His important recent published work, however, is particularly in the field of the mental testing of children. In 1909, in collaboration with Professor Treves, he undertook the application of the Binet-Simon tests of intelligence to 406 pupils of the first grade and 260 pupils of the sixth grade in the schools of Milan. The results of this investigation are given in a monograph, marked 1 in our list. The authors first describe each of the Binet-Simon tests from 4 to 13 years, inclusive, and also include in the text the materials and copies of the test blanks. They then give an analysis of their results and a comparison of these with the results obtained

by Binet and Simon. They criticize the Binet-Simon scale on the basis that the tests are not of a regularly increasing degree of difficulty, and also criticize the general concept of grading intelligence in terms of "mental age." In place of this, the authors suggest a grading of the tests with regard to difficulty and a grading of the person tested with regard to the degree of difficulty of the tests passed. Three general grades of intelligence are given: 1. Defective, those who pass only those tests which are passed by over 60 per cent. of the children; 2. Average, those who pass the tests which are passed by from 40 to 60 per cent. of the children; 3. Advanced, those who pass tests which are passed only by 20 to 40 per cent. of the children. Each grade of intelligence is further subdivided into three divisions. This is called the Treves-Saffiotti method although it is merely another way of *scoring* the tests of the Binet-Simon scale.

Saffiotti (11) attacks the concept of the "intelligence quotient," because it also employs the concept of mental age; and the author's ideas on this subject are finally crystallized and expanded into a large volume; (15) the first part of this volume deals with the general concepts of intelligence taken up from the historical point of view. An astoundingly great number of authors are referred to in this section. Then follows a discussion of the Binet-Simon scale under the heading "The Measurement of Intelligence by Mental Age." The results of all investigators who have employed this scale are given with great completeness and are made the basis of numerous and enlightening comparisons. Of great interest, even to the student who does not read Italian, are the several large tables (pp. 118-123) in which are given the mental age assigned to each of the 63 individual Binet-Simon tests by each of the 14 authors who have critically discussed the matter. One also finds tabulated (p. 130) the chronological-mental age distribution of the subjects tested by each of these 14 investigators. The last half of this volume is concerned with a critical discussion of the general concept of mental age as an index of intelligence. Saffiotti then develops his concept of scoring the Binet-Simon tests in terms of a scale of mental grades. This discussion of the Treves-Saffiotti revision is made on the basis of some new results as well as the older results by these authors, mentioned above. The book contains a bibliography of 603 titles mostly on the literature of the testing of intelligence. Although this bibliography is lacking in some very important American titles, it should prove of great assistance to the student.

A program of work for a medico-psychico-pedagogical clinic is outlined by Saffiotti in another paper. (2) The tests, as outlined, include the family history, the school and pre-school history of the case, an anthropometric examination, a somatic functional examination, and finally a psychological examination. In this latter, 15 sorts of mental processes are to be investigated and the Treves-Saffiotti and De Sanctis tests are recommended. Another paper (5) deals with the problem of the mentally deficient child in relation to juvenile delinquence. A statistical study is made of 401 cases. Of these over 42 per cent. were either readmitted to the schools or succeeded in making their way in the world. The different kinds of abnormality are discussed in relation to the different kinds of crime. Special instruction in special schools is recommended for this type of case.

The influence of social and biological factors upon intelligence is discussed in another paper. (10) For this purpose the results of the Milan investigation are analysed with regard to the occupations of the parents of the children. An examination of the results of the tests shows that the two groups whose parents were laborers and servants, on the one hand, and those whose parents were professional men and merchants on the other, show practically similar distributions. But a

great difference is found between the children attending schools in the center of the city and in the outlying districts. Saffiotti assumes that there are different degrees of excellence of teaching in these parts of the city, and hence concludes that the sort of teaching which the child obtains is a much more potent factor in determining intelligence than is the social and economic standing of the family from which the child comes. This seems to indicate, we believe, that what Saffiotti is measuring is not the native intelligence of the children but merely classroom acquisition.

The effect of pre-school methods upon the intelligence of young children is investigated. (14) A group of children were tested by the Treves-Saffiotti tests. Some of these had merely remained in the family up to school age, others were taught by the Fröbel method, others by the Montessori method and still others by mixed methods. The results show that the Fröbel method seems to be the best of the pre-school methods of instruction. Analysis shows that practically no differentiation in intelligence distribution can be made between infants raised in the home and those raised in asylums.

The results of the application of a series of psychological tests upon twins of 11 years are given with great completeness. (9) Great differences in intelligence were noted. In a speculative article (3) Saffiotti points out the relations between experimental psychology and pedagogy. Although pedagogy may draw largely from the findings of experimental psychology, the author points out that the two sciences are by no means to be confounded. In another paper (7) Saffiotti outlines a program of problems to be attacked by experimental psychology. His concept of experimental psychology is very broad indeed and includes not only social psychology but also sociology. In all, 23 groups of problems are indicated, ranging from instincts to reflection. As an example of the inclusiveness of his schema, it will be noted that under attention this author wants to investigate such topics as the influence of public opinion and the exciting of the moral sense. Another paper (8) reports the results of an experimental investigation of muscular pressure in writing numerals in arithmetical problems. This work is an extension to numerals of the researches of other investigators upon writing. A Marey tambour with graphic methods of registration was employed. Some characteristics of the amount of pressure used in making the different strokes of the numerals in the different arithmetical processes are pointed out.

Saffiotti (13) suggests a classification of the form of the verbal association reactions. This classification calls for 14 categories into which the words fall. We find this classification very much more logical than psychological. A series of verbal association reactions are classified in accordance with this grouping. The author also reports (12) a new form of electric voice key to be used in verbal association reaction experiments which seems to have a great deal of merit. Two papers (4, 6) are given over to a laudatory summary and review of the published works of Zaccaria Treves. The relation of Treves' work to experimental psychology and pedagogy are indicated.

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BOOK NOTES

A child welfare research station. Bulletin of the State University of Iowa, n. s., no. 107, Jan 15, 1916. 18 p.

Professor Seashore and his associates may well congratulate themselves on this station and the generous support that the state intends to give. Such an institution has long been a crying need, and there are those who have felt it one of the leading desiderata in our day. The study of children has already a vast body of literature to its credit and has steadily improved its methods. This institution proposes not to lose sight of the practical side of child study and we understand will select special and very definite problems for intensive research.

Development of personality; a phase of the philosophy of education. By Brother Chrysostom. Philadelphia, John Joseph McVey (c. 1916). 379 p.

This volume presents some of the pedagogic aspects of an institution which for twenty centuries has devoted itself to the highest aim of teaching, which is to bring to fruition the noblest powers and capacities of human personality, and to hold in check those tendencies that militate against this purpose. It is dedicated to religous teachers. The first part discusses the normal school, the religious novitiate and the personality of the teacher; the second is devoted to faith, the third to its practical value, the fourth to meditation, the fifth to the sociological aspects of faith.

Laws of physical science; a reference book. By Edwin F. Northrup. Philadelphia, J. B. Lippincott Co. (c. 1917). 210 p.

Exact knowledge consists of accumulated facts and sets of formulated propositions respecting facts. The data of physical science are accessible in various published tables of physical constants but there has been no handbook which contains a full list of the general propositions or laws of science, and it is these this work proposes to give. It divides its data into the following six heads: Mechanics; Hydrostatics, hydrodynamics and capillarity; Sound; Heat and physical chemistry; Electricity and magnetism; Light. The work is attractively bound in flexible covers.

Standard method of testing juvenile mentality by the Binet-Simon scale with the original questions, pictures and drawings; a uniform procedure and analysis. By Norbert J. Melville. Philadelphia, J. B. Lippincott Co. (c. 1917). 142 p.

Here we have another discussion of the Binet-Simon scale. It is designed for examiners using this scale, and emphasizes a number of important points frequently not fully apprehended by users of mental tests. Part I discusses the general procedure in gathering and analyzing the data; Part II discusses the uniform method of applying the Binet-Simon scale. There is an appendix on tests above fifteen, scales for marking drawings, etc. The work is pretty fully illustrated.

School and college credit for outside Bible study; a survey of a non-sectarian movement to encourage Bible study. By CLARENCE ASHTON WOOD. Yonkers-on-Hudson, World Book Co., 1917. 317 p.

The author first discusses cooperation between state and church, then the advantages of the plan, the plan as related to higher and secondary education, adaptations in the central states (eastern and western divisions), a Kansas proposal, a Canadian situation, action of educational and religious organizations, questions of legal and sectarian difficulties, and the mode of procedure. In an appendix he prints various syllabi, North Dakota, Colorado, Oregon and Virginia.

A student in arms. By DONALD HANKEY. New York, E. P. Dutton and Co. (1917). 290 p.

The author, who was killed in action on the Western front, October 26, 1916, declared that these essays owe their existence to two persons, one of whom, Mr. Strachey, writes an introduction. There are twenty chapters, including Kitchener's army, an experiment in democracy, the cockney warrior, on some who were lost and afterwards were found, the book of wisdom, marching through France, the making of a man, the honor of the brigade, heroes and heroics, the religion of the inarticulate, the indignity of labor, flowers of Flanders, etc.

English essayists; a reader's handbook. By WILLIAM HAWLEY DAVID. Boston, Richard G. Badger (c. 1916). 217 p.

This is a handbook for readers of these essayists. The author knows few things more subject to abuse than books about books. He divides his matter into the following topics: origin and early exponents; eighteenth century essayists; nineteenth century essayists (of whom he has thirteen). In the appendix he discusses the kinds of essays, minor English and contemporary essayists.

An inductive study of standards of right. By MATTHEW HALE WILSON. Boston, Richard G. Badger (c. 1916). 321 p.

After surveying the field, the author discusses in separate chapters the teacher, the pupil, physician, lawyer, clergyman, editor, banker, trade, corporations, labor unions, insurance, women in business, political parties, municipal control, parents, children, the city and farm, charity, the criminal, the saloon, mental, emotional and volitional hygiene, play, manners, the friend.

Report of the Commissioner of Education for the year ended June 30, 1916. Washington, Gov't. Printing Office, 1916. 2 v.

The survey of the different grades and kinds of education is full and interesting. So, too, are the special chapters on the education of immigrants, on educational surveys, extension, museums, Young Men's Christian Association, educational boards, foundations and associations.

Report of the Secretary of the General Education Board, 1915-16. New York, General Education Board, n. d. 86 p.

This report is a model of succinct statement covering a vast body of work, with the treasurer's report at the end, with maps to show the distribution of the various aids.

Bulletins of the Bureau of Education. Washington, Gov't. Printing Office.

1916, No. 2. *Rural and agricultural education at the Panama-Pacific International exposition.* By H. W. FOGHT. 112 p.

1916, No. 34. *Service instruction of American corporations.* By LEONHARD FELIX FULD. 73 p.
1916, No. 35. *Adult illiteracy.* By WINTHROP TALBOT. 90 p.
1916, No. 36. *Monthly record of current educational publications; December, 1916.* 22 p.
1916, No. 41. *Agricultural and rural extension schools in Ireland.* By A. C. MONAHAN. 38 p.
1916, No. 46. *Recent movements in college and university administration.* By SAMUEL PAUL CAPEN. 60 p.
1916, No. 47. *Report on the work of the Bureau of Education for the natives of Alaska, 1914-15.* 85 p.
1916, No. 48. *Rural school supervision.* By KATHERINE M. COOK and A. C. MONAHAN. 63 p.
1916, No. 50. *Statistics of state universities and state colleges for the year ended June 30, 1916.* 15 p.
1917, No. 1. *Monthly record of current educational publications. January, 1917.* 23 p.
1917, No. 6. *Educative and economic possibilities of school-directed home gardening in Richmond, Indiana.* By J. L. RANDALL. 23 p.
1917, No. 7. *Monthly record of current educational publications, February, 1917.* 21 p.

Tentative outline of proposed educational code for the state of Colorado (revised to December 1, 1916). Denver, Civic and Commercial Association, n. d. 30 p.

Report on speech defectives in the St. Louis Public Schools. By J. E. W. WALLIN. (Repr. from Annual Report of the Board of Education, 1915-16, p. 174-211.

Pais. Vol. 1, no. 1. Edited by Dr. A. Van Voorthuijsen. Groningen, January, 1917. 16 p.